IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

This PHOTOFACT Folder Set is

WIRE-SEALED FOR YOUR PROTECTION

to guarantee completeness of contents

DO NOT ACCEPT IF SEAL HAS BEEN BROKEN

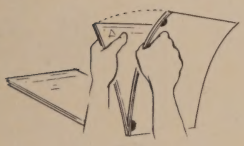
TO OPEN ***JUST DO THIS:***

1

Take hold of the Set with both hands. Place your thumbs directly under the top wire-seal; then, divide the contents equally by putting your thumbs midway through the thickness of the Set. Now, pull the two sections apart at the top, firmly.

2

Repeat this process, pulling close to the wire-seal at the bottom, so that the set is now divided into two equal parts.



3

Continue this "pulling-apart" process with the section in which the wire-seals remain, dividing it in half.

4

Finally, remove the wire-seals left in the last section; this can easily be done with your fingernail or any sharp instrument.

Your "Safety-Sealed" PHOTOFACT Set is now ready for profit-making use . . .

IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

The PHOTOFACT® Servicer

SET 527 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ APRIL 1961

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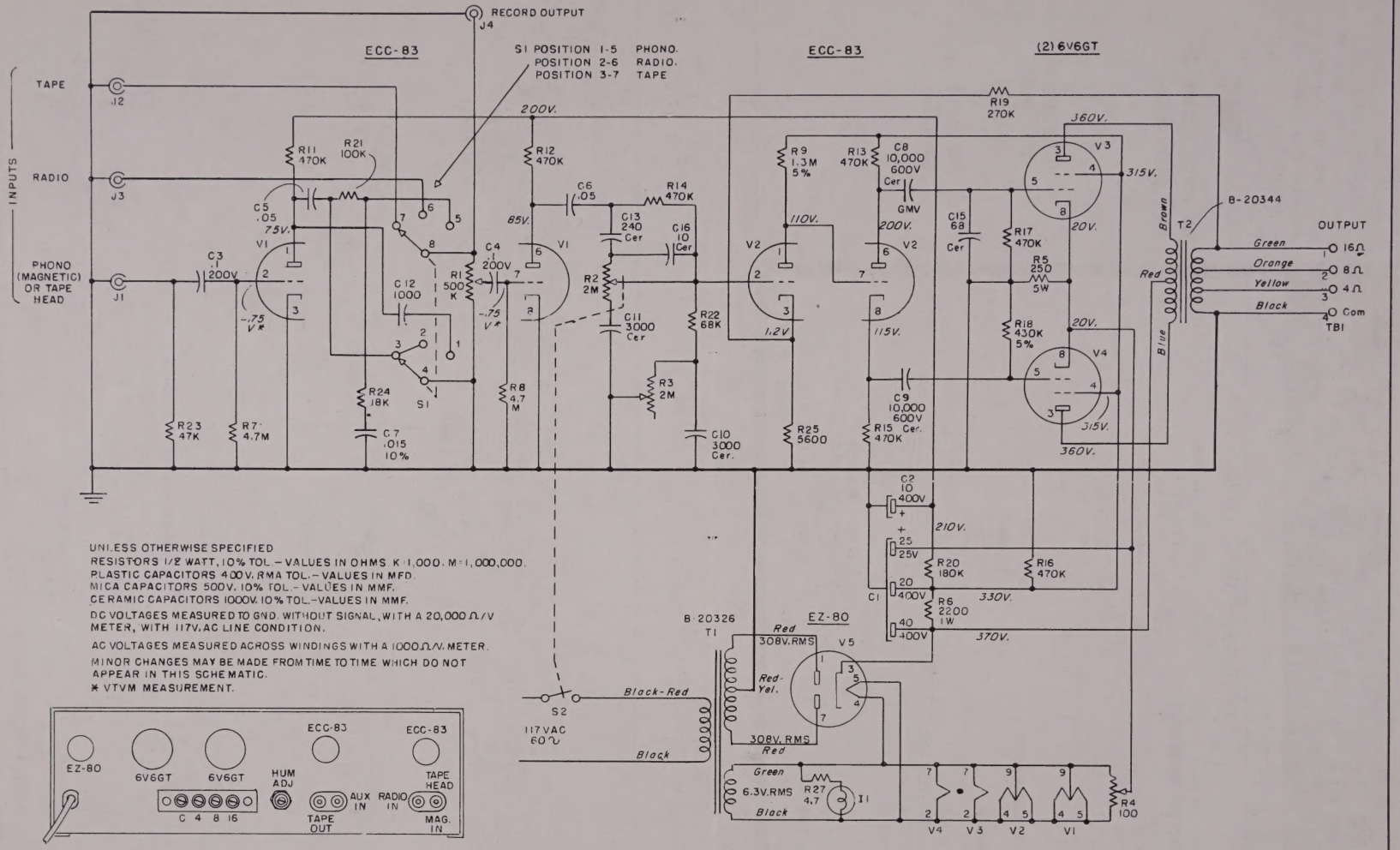
This Servicer provides you with essential data on other models or special equipment not covered in standard PHOTOFACT folders. The schematics and supplementary data included here will be of valuable help to you in servicing this equipment.

IN THIS ISSUE OF THE SERVICER:

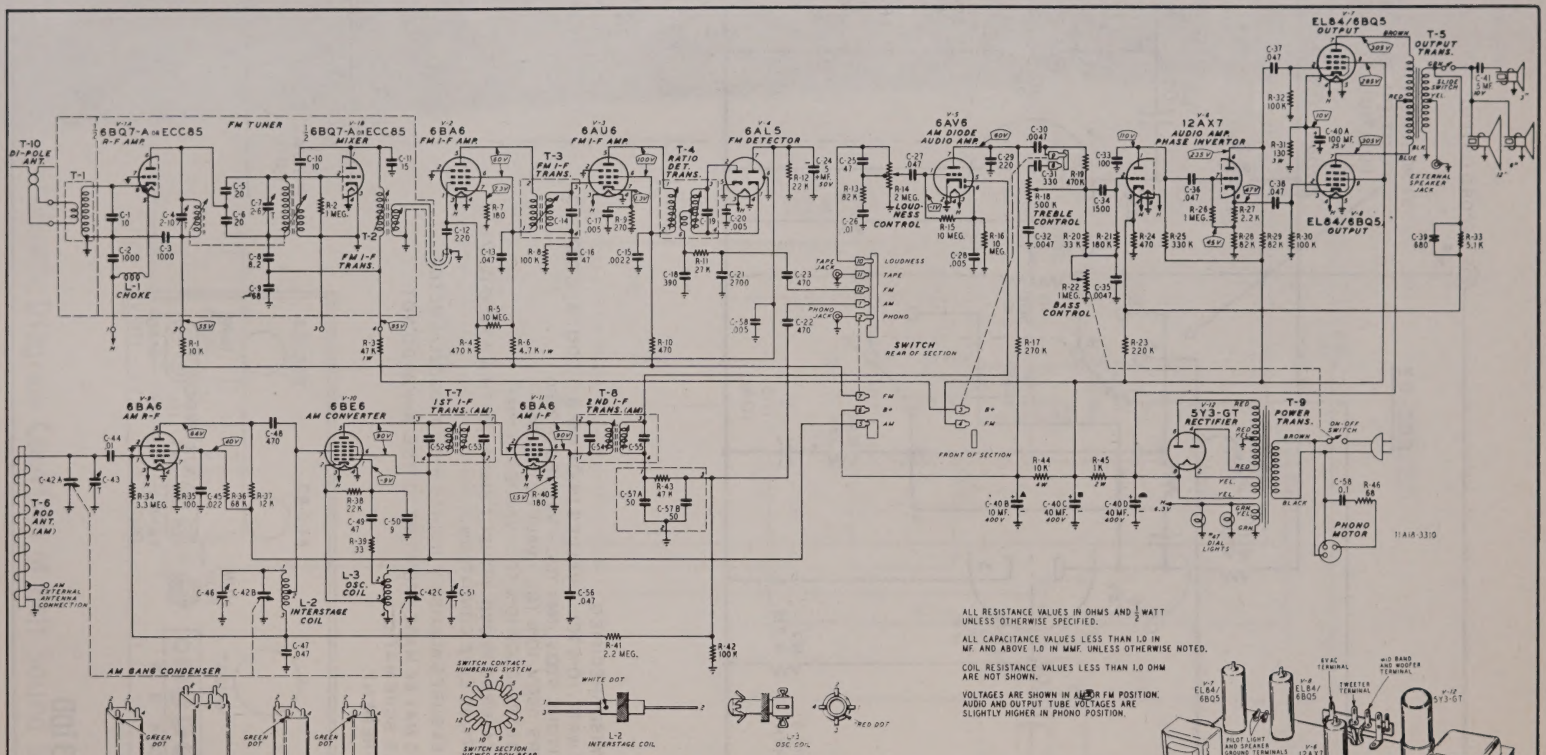
Airline Models
WG-2670A,
WG-2671A

Bell Sound
Model 310D



BELL SOUND MODEL 310D

Schematic Diagram Courtesy of Bell Sound Systems, Inc.

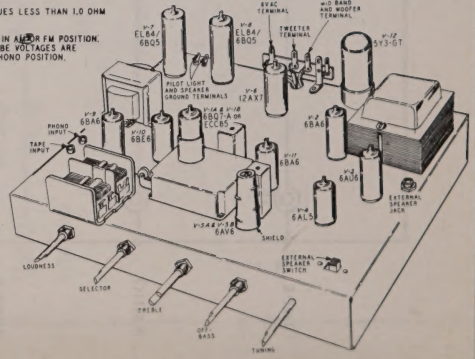


ALL RESISTANCE VALUES IN OHMS AND $\frac{1}{2}$ WATT UNLESS OTHERWISE SPECIFIED.

ALL CAPACITANCE VALUES LESS THAN 1.0 IN MF. AND ABOVE 1.0 IN MMF. UNLESS OTHERWISE NOTED.

COIL RESISTANCE VALUES LESS THAN 1.0 OHM ARE NOT SHOWN.

VOLTAGES ARE SHOWN IN AM OR FM POSITION. AUDIO AND OUTPUT TUBE VOLTAGES ARE SLIGHTLY HIGHER IN PHONO POSITION.



TUBE SOCKET VOLTAGES

Socket voltages are shown on the Schematic diagram at the tube socket terminals. All voltages are between the socket terminal and chassis ground. Plate, screen and cathode voltages were taken with a 1000 ohm-per-volt meter with a 300 volt scale used for plate and screen voltages. Audio grid voltages were read with a vacuum tube volt-meter.

AIRLINE MODELS WG-2670A, WG-2671A

Schematic Diagram Courtesy of Montgomery Ward & Co.

PHOTOFACT® Folder with CIRCUITRACE®

**deFOREST
MODEL DKW**

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

deFOREST
MODEL DKW

MODEL DKW

deFOREST
MODEL DKW

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

MODEL DKW

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

TRADE NAME	deFOREST Model DKW
MANUFACTURER	Sanabria Television Corp., 1522 West Lawrence Ave., Chicago 40, Illinois
TYPE SET	Television Receiver (with FM Tuner, Preamp., Power Amp., and 4 Speed Automatic Record Changer)
TUBES	TV - Fifteen (VHF) Preamp. - One FM Tuner - Four Power Amp. - Six
POWER SUPPLY	110-120 Volts AC, 60 Cycle
RATING	TV - 160 Watts, 1.5 Amp. @ 117 Volts AC FM Tuner, Preamp., Power Amp. - 90 Watts, .85 Amp. @ 117 Volts AC (Less Phono Motor) TV with FM Tuner, Preamp., Power Amp. - 250 Watts, 2.35 Amp. @ 117 Volts AC (Less Phono Motor)
TUNING RANGE	TV - Channels 2 thru 13 VHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier) FM Tuner - 88 to 108MC (IF 10.7MC)

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE SIMILAR VM1201 - PHOTOFACT SET 436 FOLDER 18.

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

The safety glass is an integral part of the picture tube.

FUSE

A 3/10 Amp. Fuse is used for horizontal sweep circuit protection. (For location, see "Tube Placement Chart".)

A 3 Amp. (Line) Fuse is used for low voltage power supply protection. (For location, see "Tube Placement Chart".)

AGC

The AGC may be varied by means of a Range Control. (For location, see "Tube Placement Chart".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horizontal Frequency Slug. (For location, see L13 in Photo, page 18.)

BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Ratio Detector Secondary (A8) located at top of chassis.

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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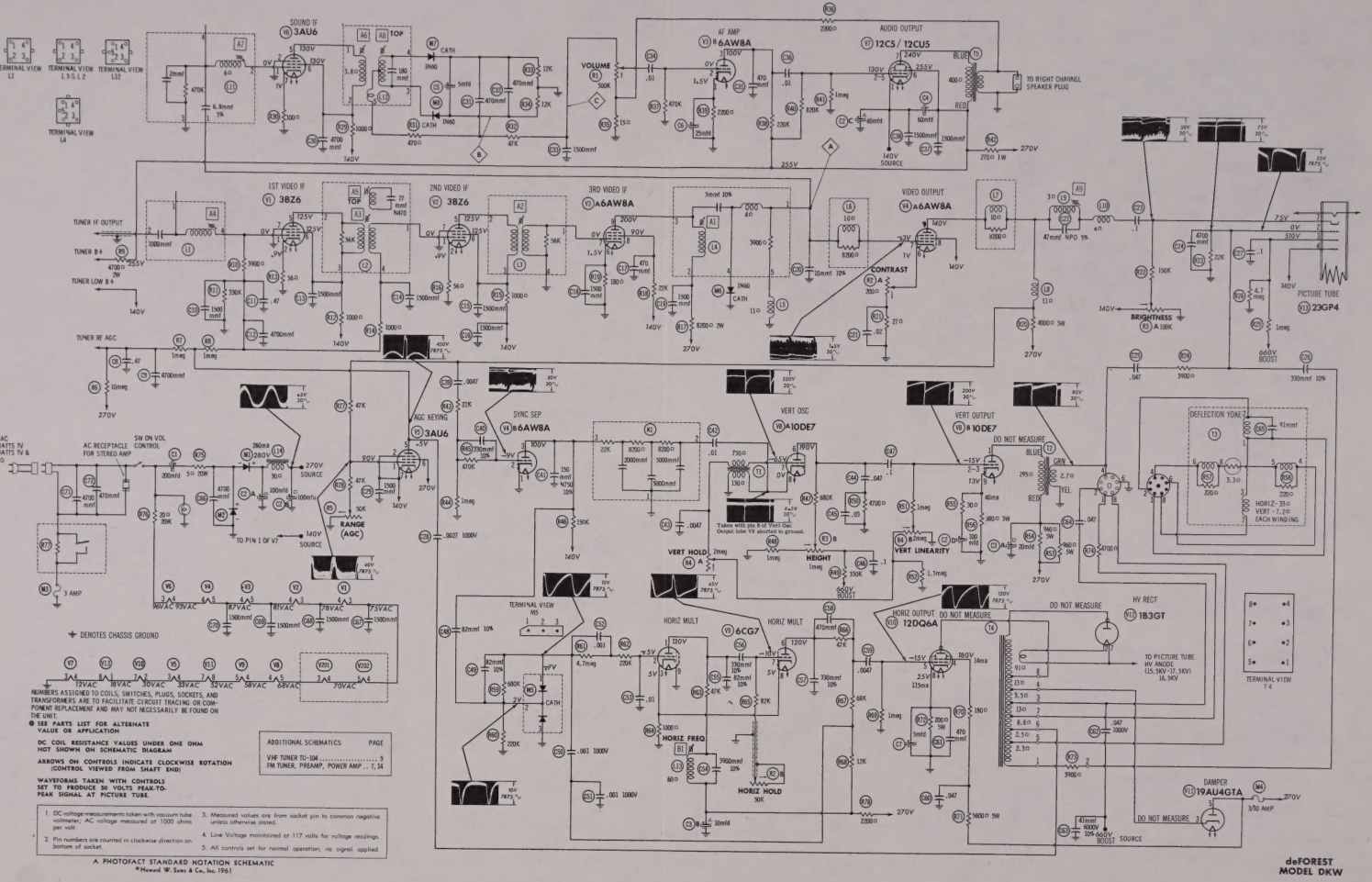
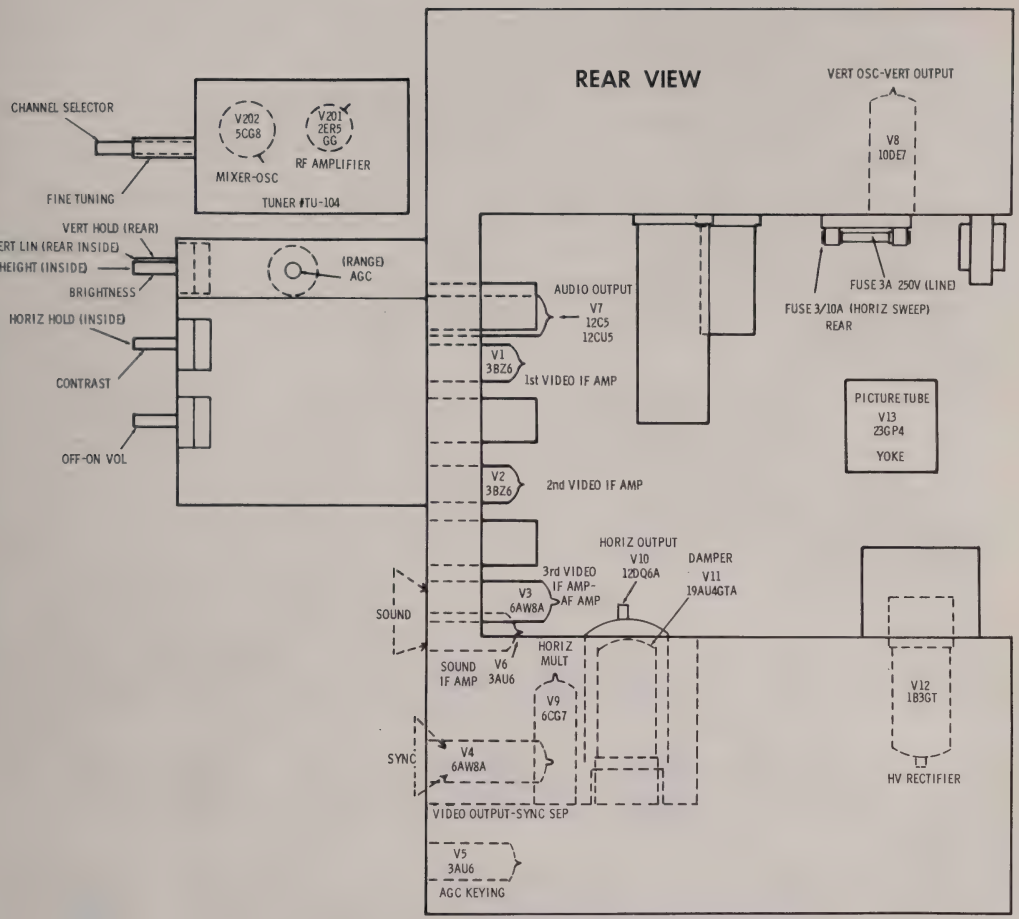

SOUND IF
V6 3AU6
1ST VIDEO IF
V1 3BZ6
2ND VIDEO IF
V2 3BZ6
3RD VIDEO IF
V3 A6AW8A
AF AMP
V3 B 6AW8A
AUDIO OUTPUT
V7 12C5 / 12CU5
VIDEO OUTPUT
V4 A6AW8A
SYNC SEP
V4 B 6AW8A
VERT OSC
V8 A10DE7
VERT OUTPUT
V9 B 10DE7
HORIZ MULT
V9 6CG7
HORIZ MULT
V10 6CG7
HORIZ OUTPUT
V10 12DQ6A
HV RECT
V12 1B3GT
DAMPER
V11 19AU4GTA
PICTURE TUBE
V13 23GP4
VOLUME
CONTRAST
BRIGHTNESS
RANGE (AGC)
VERT HOLD
HEIGHT
VERT LINEARITY
HORIZ FREQ
HORIZ HOLD
TUNER IF OUTPUT
TUNER B+
TUNER LOW B+
TUNER RF AGC
AGC KEYING
TO RIGHT CHANNEL SPEAKER PLUG
TO PICTURE TUBE HV ANODE (15.5KV-17.5KV) 16.5KV
DEFLECTION YOKE
HORIZ- 33Ω
VERT - 7.2Ω EACH WINDING
DO NOT MEASURE
117 VAC 160 WATTS TV 250 WATTS TV & RADIO
AC RECEPTACLE FOR STEREO AMP
SW ON VOL CONTROL
3 AMP
DENOTES CHASSIS GROUND
TERMINAL VIEW L1
TERMINAL VIEW L3 & L2
TERMINAL VIEW L2
TERMINAL VIEW L4
TERMINAL VIEW M5
TERMINAL VIEW T4
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.
● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.
ADDITIONAL SCHEMATICS PAGE
VHF TUNER TU-104 5
FM TUNER, PREAMP, POWER AMP .. 7, 14
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line Voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1961
deFOREST MODEL DKW

TV TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

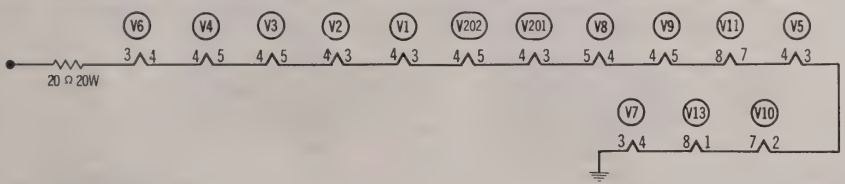
POWER SUPPLY FAILURE
No raster, no sound Fuse (Line), Rectifiers (B+)

SWEEP FAILURE
No raster, has sound V9, V10, V11, V12, V13
No vertical deflection V8
Poor vert. linearity or foldover V8
Poor horiz. linearity or foldover V9, V10, V11
Narrow picture V9, V10, V11, Rectifiers (B+)
Vert. off freq. V8
Horiz. off freq. Diodes (Horiz. AFC), V9

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, Diode (Video Det.)
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V13
Has pic, no sound V3, V8, V7
Overloaded picture V5

SYNC FAILURE
No vert. sync V4
No horiz. sync V4
No vert. or horiz. sync V4

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



SET 527 FOLDER 1

deFOREST MODEL DKW

FOLDER 1

TV ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
The High Voltage Lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A1 thru A12, A15 ..... GENERAL CEMENT #8282, 8606, 8606L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A13, A14 and Mixer Plate Coil ... GENERAL CEMENT #9296, 9297
WALSCO #2546, 2547

VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough generator output to provide a usable indication.
Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Place a thin insulated metal strip between the Mixer-Osc. tube and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	45MC (10MC Swp.)	42.25MC 45.75MC	Between Any Two Channels	Vert. Amp. thru 47K to point Ⓐ. Low side to chassis.	A1, A2, A3, A4, & Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
2.	"	"	41.25MC	"	"	A5	Adjust to place marker in trap notch as in Fig. 2.

SOUND IF ALIGNMENT

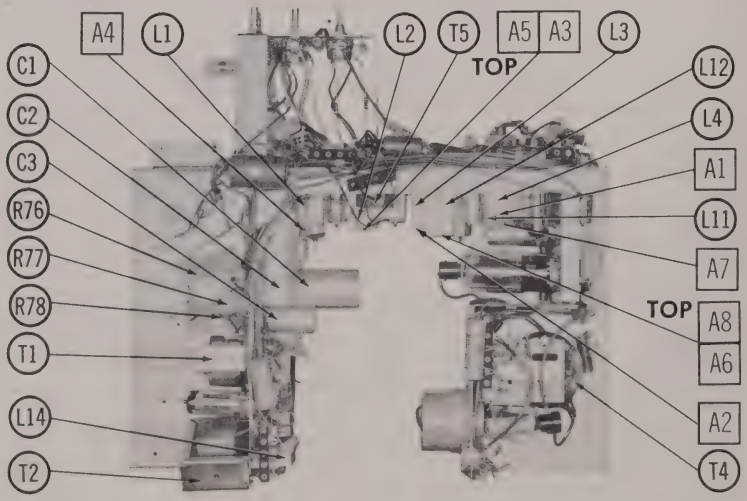
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
3.	High side thru .01mfd to point Ⓐ. Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe to point Ⓑ. Common to chassis.	A6, A7	Adjust for maximum deflection.
4.	"	"	"	DC probe to point Ⓒ. Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

4.5MC TRAP ALIGNMENT

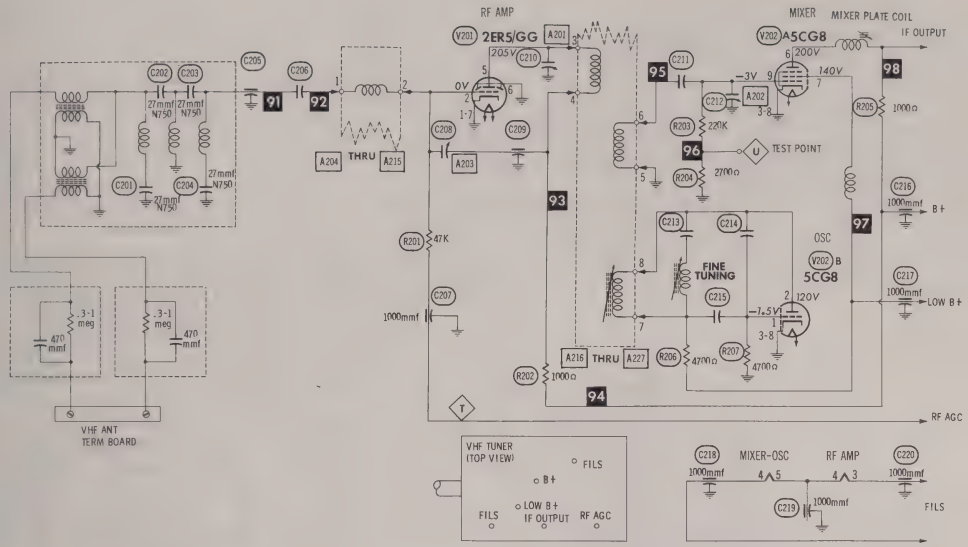
Tune in a strong TV signal and set Contrast at maximum. Adjust the Fine Tuning until a beat pattern is visible. Adjust A9 for MINIMUM beat interference.

FIG. 1

FIG. 2



TV CHASSIS—FRONT VIEW



A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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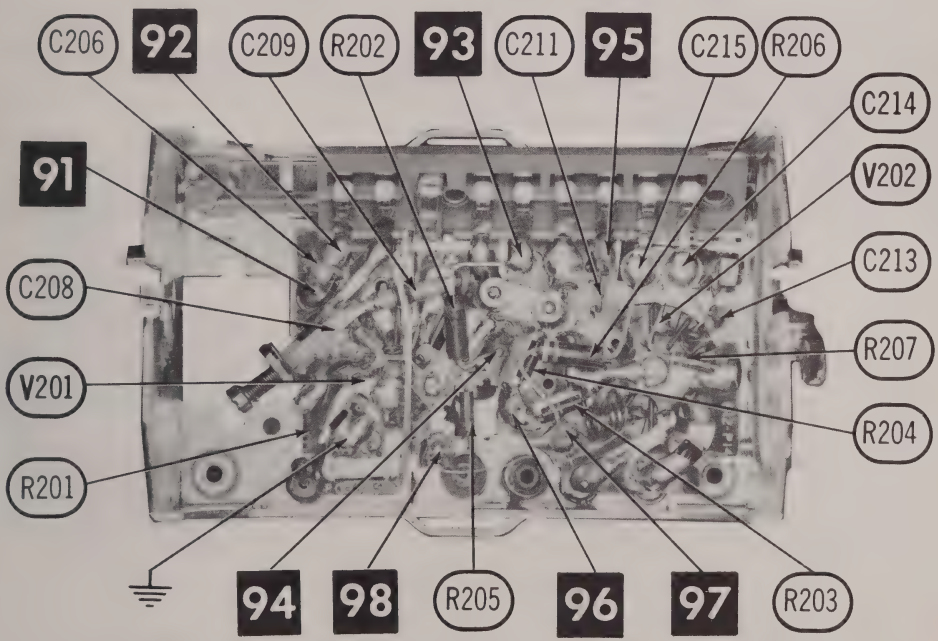
VHF TUNER TU-104



A Howard W. Sams CIRCUITRACE* Photo

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VHF TUNER TU-104 - BOTTOM VIEW

VHF TUNER ALIGNMENT INSTRUCTIONS

TU-104

PRE-ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER TO PROTECT the Test Equipment.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.

VHF RF AND MIXER ALIGNMENT

Connect the negative lead of a 4.5 volt bias supply to point Ⓣ. Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	195MC	193.25MC 197.75MC	10	Vert. Amp. thru 10K to point Ⓓ. Low side to chassis.	A201, A202, A203	Adjust A201 and A202 for maximum amplitude and symmetry with markers as shown in Fig. 201. Increase bias for MINIMUM amplitude of response curve. Without changing the bias adjust A203 to obtain MINIMUM response on the scope.
2.	"	"	213MC	211.25MC 215.75MC	13	"	A204	Adjust for maximum amplitude of response similar to Fig. 201. Adjust by expanding or compressing coil turns.
			207MC	205.25MC 209.75MC	12		A205	
			201MC	199.25MC 203.75MC	11		A206	
			195MC	193.25MC 197.75MC	10		A207	
			189MC	187.25MC 191.75MC	9		A208	
			183MC	181.25MC 185.75MC	8		A209	
			177MC	175.25MC 179.75MC	7		A210	
			85MC	83.25MC 87.75MC	6		A211	
			79MC	77.25MC 81.75MC	5		A212	
			69MC	67.25MC 71.75MC	4		A213	
			63MC	61.25MC 65.75MC	3		A214	
			57MC	55.25MC 59.75MC	2		A215	

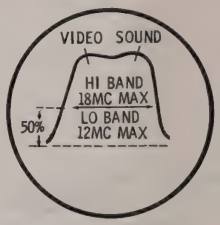


FIG. 201

VHF OSCILLATOR ALIGNMENT

Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the Fine Tuning to the center of its range.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Amp. thru 47K across Video Det. load.	A216	Adjust to place sound marker in trap notch as in Fig. 202. Video marker should fall at 50%.
			207MC	205.25MC 209.75MC	12		A217	
			201MC	199.25MC 203.75MC	11		A218	
			195MC	193.25MC 197.75MC	10		A219	
			189MC	187.25MC 191.75MC	9		A220	
			183MC	181.25MC 185.75MC	8		A221	
			177MC	175.25MC 179.75MC	7		A222	
			85MC	83.25MC 87.75MC	6		A223	
			79MC	77.25MC 81.75MC	5		A227	
			69MC	67.25MC 71.75MC	4		A225	
			63MC	61.25MC 65.75MC	3		A226	
			57MC	55.25MC 59.75MC	2		A227	

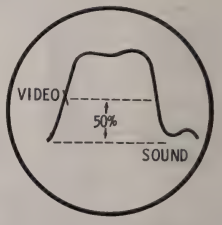
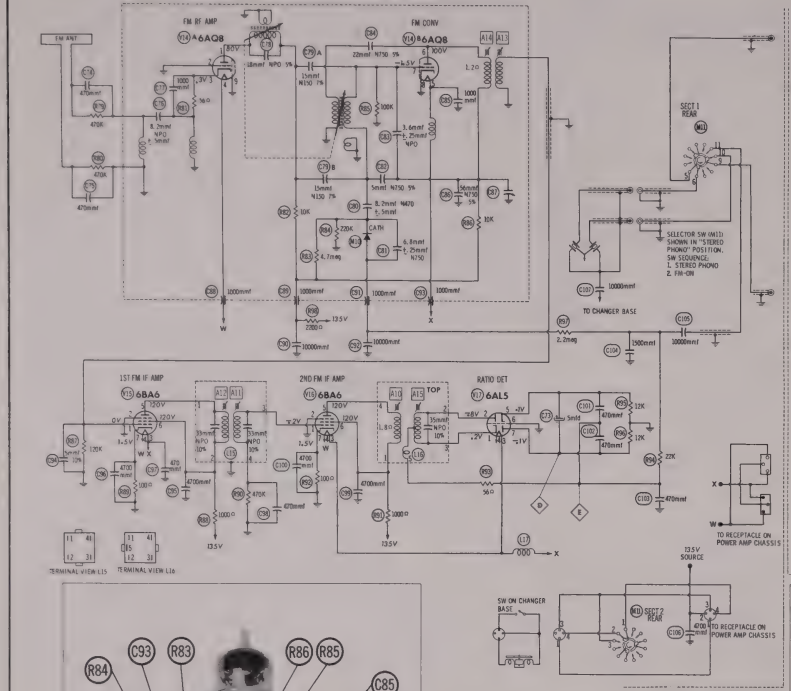
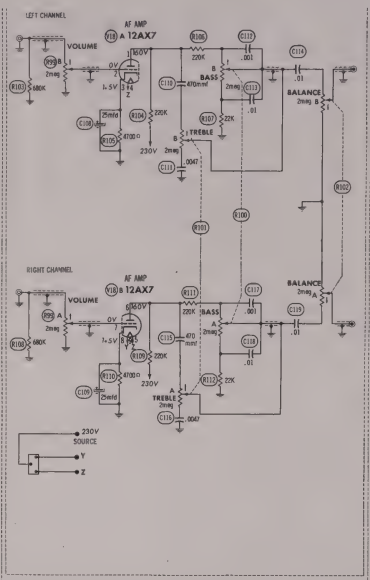
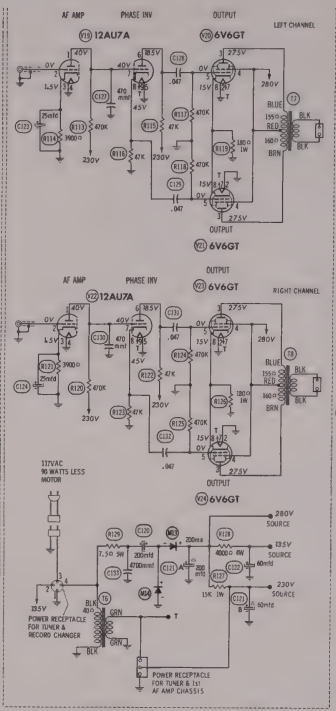
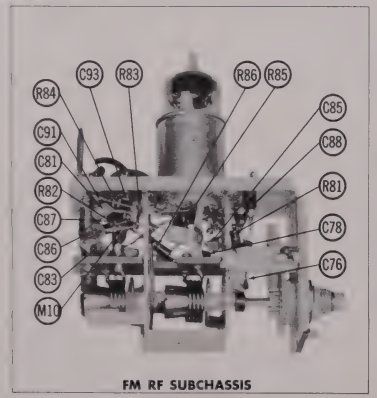


FIG. 202

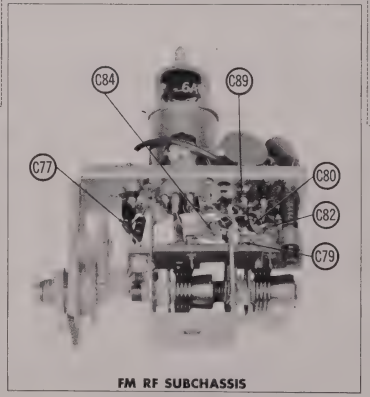

FM RF AMP
FM CONV
1ST FM IF AMP
2ND FM IF AMP
RATIO DET
SECT 1 REAR
SELECTOR SW (W13) SHOWN IN "STEREO PHONO" POSITION. SW SEQUENCE: 1. STEREO PHONO 2. FM-ON
TO CHANGER BASE
TO RECEPTACLE ON POWER AMP CHASSIS
SW ON CHANGER BASE
SECT 2 REAR
TERMINAL VIEW L15
TERMINAL VIEW L16







FM RF SUBCHASSIS



FM RF SUBCHASSIS

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V14	6AQ8	††16K	0Ω	56Ω	0Ω	.1Ω	††16K	100K	0Ω	0Ω
V15	6BA6	.1Ω	0Ω	.1Ω	0Ω	††5000Ω	††5000Ω	100Ω		
V16	6BA6	470K	0Ω	.1Ω	0Ω	††5000Ω	††5000Ω	100Ω		
V17	6AL5	1MF	1MF	.1Ω	0Ω	12K	0Ω	12K		
V18	12AX7	††235K	•100Ω	4700Ω	.1Ω	.1Ω	††235K	•100Ω	4700Ω	0Ω
V19	12AU7A	††485K	•800K	3900Ω	0Ω	0Ω	††62K	††485K	47K	.1Ω
V20	6V6GT	NC	0Ω	††155Ω	††0Ω	470K	NC	.1Ω	180Ω	
V21	6V6GT	NC	0Ω	††160Ω	††0Ω	470K	NC	.1Ω	180Ω	
V22	12AU7A	††485K	•800K	3900Ω	0Ω	0Ω	††62K	††485K	47K	.1Ω
V23	6V6GT	NC	0Ω	††155Ω	††0Ω	470K	NC	.1Ω	180Ω	
V24	6V6GT	NC	0Ω	††160Ω	††0Ω	470K	NC	.1Ω	180Ω	

†† MEASURED FROM OUTPUT OF M13.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
NC NO CONNECTION

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FM TUNER, PREAMP., POWER AMP.

TV PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	3BZ6	V7	Audio Output	12C5/12CU5
V2	2nd Video IF Amp.	3BZ6	V8	Vert. Osc. - Vert Output	10DE7
V3	3rd Video IF Amp. - AF Amp.	6AW8A	V9	Horiz. Mult.	6CG7
V4	Video Output - Sync Sep.	6AW8A	V10	Horiz. Output	12DQ6A
V5	AGC Keying	3AU6	V11	Damper	19AU4GTA
V6	Sound IF Amp.	3AU6	V12	HV Rectifier	1B3GT

GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

PICTURE TUBE

ITEM No.	REPLACEMENT DATA					NOTES
	de FOREST PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V13	23GP4		23CP4 ①		23CP ②	① Aluminized ② Silver Screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT.	deFOREST PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.		
C1	200	200		AFHS1-31-85	XA0318	FP126	TMS-1490	TVL-1547		
C2A	■100	350		AFH4-99-55		FP330. 28				
B	■100	350				TC69				
C	▲60	200								
D	100	50								
C3A	■20	300		AFH2-50	B0390	FP231. 3	TMD-2620	TVL-2754		
B	▲10	300								
C4	60	150		PRS1490	BR6015	TC68	TD-60-250	TVA-1415		
C5	5	50		PRS1310	BBR5-50	TC30	TD-5-50	TVA-1303		
C6	25	6		PRS1260	BBR25-6	TC26	TD-25-25	TVA-1205		
C7	5	50		PRS1310	BBR5-50	TC30	TD-5-50	TVA-1303		

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REMARKS	REPLACEMENT DATA					
					AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	.47	200V	10%		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C9	4700				BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C10	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D47
C11	.47	200V			P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P10
C12	4700				BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C13	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C14	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C15	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C16	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C17	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C18	1500				BPD-0015	DD-152	BYA10D15	CCD-471	B-215	5HK-D15
C19	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C20	10		10%		1469-00001	TCZ-10	22R5Q1	CM-19B-100K	MCB215	MS-41
C21	.02	600V			P688N-02	DD-203	CUB6S2	6DP-2-203	GEM-612	6TM-S20
C22	47	NPO	5%			DTZ-47	C10Q47C		CNO-447	10TCC-Q47
C23	.1	600V			P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-S10
C24	4700				BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C25	.047	600V			P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	GEM-6147
C26	330		10%		DI-330		L10T33	CCD-331	GP333	10TS-T33
C27	.1	600V			P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C28	.0027	1000V				DD-272	CUB10D3	16DP-2-302	B-227	10TM-D30
C29	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C30	4700				BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C31	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C32	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C33	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C34	.01	200V			P288N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C35	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C36	.01	200V			P288N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C37	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C38	1500				BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C39	.0047	600V			P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6147	6TM-D47
C40	330		10%		1469-00033		5R5T33	CM-19B-331K	MCB241	MS-333
C41	150	N750	10%		N750-DI 150	DTN-150	C10T15U	CCTN-151	CN7-315	10TCU-T15
C42	.01	200V			P288N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C43	.0047	600V			P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C44	.047	600V			P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C45	.03	600V			P688N-03	DD-303	CUB6S3	6DP-3-303	GEM-613	6TM-S30
C46	.1	600V			P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C47	.1	600V			P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C48	82		10%		1469-000082	TCZ-82	22R5Q82	CM-19B-820K	CNO-482	MS-482
C49	82		10%		1469-000082	TCZ-82	22R5Q82	CM-19B-820K	CNO-482	MS-482
C50	.001	1000V			P1088N-001	DD-102	CUB10D1	16DP-2-102	GEM-1021	10TM-D10
C51	.001	1000V			P1088N-001	DD-102	CUB10D1	16DP-2-102	GEM-1021	10TM-D10
C52	.001	200V			P288N-001	D6-102	CUB6D1	6DP-1-102	GEM-621	6TM-D10
C53	.01	200V			P288N-001	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C54	3900		10%		1464-0039		1R5D39	CM-20B-392K	MCJ462.5	MS-239
C55	82		10%		1469-000082	TCZ-82	22R5Q82	CM-19B-820K	CNO-482	MS-482
C56	330		10%		1469-00033		5R5T33	CM-19B-331K	MCB241	MS-333
C57	330		10%		1469-00033		5R5T33	CM-19B-331K	MCB241	MS-333
C58	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C59	.0047	600V			P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C60	.047	600V			P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C61	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C62	.047	1000V			P1088N-047		CUB10S47	16DP-5-473	GEM-10147	10TM-S47
C63	41	6000V	10%						8DY-439	
C64	.047	600V			P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C65	91	3000V	10%						3DY-310	30TCY-T10
C66	4700				BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47

TV PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C67	1500		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C68	1500		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C69	1500		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C70	1500		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C71	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C72	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	deFOREST PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	500K			B-60-S	A47-500K-Z	Q13-133	U48	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power Off-On
R2A	200Ω			F1-0		†† QJ-1357		Contrast
B	50K			R2-29				Horiz. Hold
R3A	100K			F1-31		† QJ-1533	■ UE4210	Brightness
B	1meg			R2-51				Height
R4A	2meg			F1-67		‡ QJ-1532	▲ UE4211	Vert. Hold
B	2meg			R2-67				Vert. Linearity
R5A	50K			B-31	A47-50K-S	Q11-123	U35	Range (AGC)
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

†† "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B11-201, P17-102 (Panel). B11-123, R15-017 (Rear).

† "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B11-128, P17-102 (Panel). (Not available as a factory assembled unit). B11-137, R15-017 (Rear).

‡ "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B11-139, P17-102 (Panel). (Not available as a factory assembled unit). B11-139, R15-017 (Rear).

■ "STA-LOC" Equivalent: FA15L, RU16L, OS1000A, IK750.

▲ "STA-LOC" Equivalent: FA26L, RU26L, OS1000A, IK750.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R6	10meg				R43	22K			
R7	1meg				R44	1meg			
R8	1meg				R45	470K			
R9	4700Ω 2W				R46	150K			
R10	3900Ω				R47	680K			
R11	330K				R48	1meg			
R12	1000Ω				R49	330K			
R13	56Ω				R50	4700Ω			
R14	1000Ω				R51	1meg			
R15	1000Ω				R52	1.5meg			
R16	56Ω				R53	960Ω 5W	PW5-960	5G-960	
R17	8200Ω 2W				R54	960Ω 5W	PW5-960	5G-960	
R18	22K				R55	30Ω			
R19	180Ω				R56	380Ω 3W	PW3-380	3G-380	
R20	4000Ω 5W	PW5-4000	5G-4000		R57	220Ω			
R21	27Ω				R58	220Ω			
R22	150K				R59	680K			
R23	22K				R60	220K			
R24	3900Ω				R61	4.7meg			
R25	1meg				R62	220K			
R26	4.7meg				R63	47K			
R27	47K				R64	1000Ω			
R28	47K				R65	82K			
R29	1000Ω				R66	47K			
R30	100Ω				R67	68K			
R31	470Ω				R68	12K			
R32	47K				R69	1meg			
R33	12K				R70	180Ω			
R34	12K				R71	5600Ω 5W	PW5-5600	5W-SQ-5600	
R35	15Ω				R72	200Ω 5W	PW5-200	5W-SQ-200	
R36	2200Ω				R73	3900Ω			
R37	470K				R74	4700Ω			
R38	220K				R75	5Ω 20W	PW20-5Ω	20W-SQ-5	
R39	2200Ω				R76	20Ω 20W	PW20-20	20W-SQ-20	
R40	820K				R77				
R41	1meg				R78	2200Ω			
R42	270Ω 1W								

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		deFOREST PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	1st Video IF						① Wound on 8200Ω Resistor
L2A	2nd Video IF		TV-127 *	6232 *	RTC-8559 *	T209 *	* Connect 56K Resistor externally.
B	41.25MC Trap						▲ Parallel with 8200Ω Resistor.
L3	3rd Video IF		TV-126 *	6234 *	RTC-8563 *	T211 *	
L4A	4th Video IF						
B	RF Choke (13uh)		BC-566	4612	RTC-8522	T860	
L5	Peaking (265uh)		TV-198	6130	RTC-8576	T316	
L6	Peaking (200uh)	①	TV-197 ▲	6154 ▲	RTC-8586 ▲	T312 ▲	
L7	Peaking (200uh)	①	TV-197 ▲	6154 ▲	RTC-8586 ▲	T312 ▲	
L8	Peaking (265uh)		TV-198	6130	RTC-8576	T316	
L9	4.5MC Trap		TV-151	1469	RTC-8602	T249	
L10	RF Choke (13uh)		BC-566	4612	RTC-8522	T860	
L11	Sound IF						
L12	Ratio Detector		TV-115	6271	RTC-8620	T237	

TV PARTS LIST AND DESCRIPTIONS (Continued)

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA deFOREST PART No.	Merit PART No.	Miller PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	Workman TV PART No.
L13	Horiz. Stabilizer		TV-163	6211	RC110	RTC-8823	HS-5	WLC-25	T103

FILTER CHOKE

ITEM No.	RATINGS CURRENT (Measured)	RATINGS DC RES	REPLACEMENT DATA INDUCTANCE @ CURRENT 1000 (%)	deFOREST PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L14	250A	30Ω	1.4 Hy.			C-2343	26C44	C-28X	

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	deFOREST PART No.	Merit PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	Vert. Osc.		A-3006		VBO-201	26A05	A-122X	
T2	Vert. Output					26S14 ①	A-145X	
T3	Yoke (Horiz. 19.4MH) (114Ω) (Vert. 13.6MH) Horiz. Output			PCM-2017 ②	DY-27A ③	Y-48 ③	Y-60-1 ④	
T4							D-526	

① Remove Pin #6 of Yoke Plug from ground. Connect Blue/White Lead to plate, Black Lead to Pin #6 of Yoke Plug and junction of Resistors R53, R54 and Capacitor C34; Red Lead to Pin #4 of Yoke Plug.
② Remove Horizontal Damping Network. Connect same as original.
③ Use original Rear Cover and Centering Device and Damping Network if necessary.
④ Remove 470Ω Resistor across vertical windings.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	deFOREST PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T5	3500Ω	1-2Ω		A-3902	A-3849	24S06	S-54X	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	deFOREST PART No.	REPLACEMENT DATA	
K1	Vert. Integrator	2000mmf, 5000mmf, 5000mmf, 8200, 8200, 22K		Aerovox Centralab Sprague	PA-100 PC-100 V-1/V-3

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	deFOREST PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.280A		1N763	F4	8R500	
M2	.280A		1N763	F4	8R500	

FUSES

ITEM No.	TYPE	RATING	deFOREST PART No. FUSE	deFOREST PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M3	3AG	3A 250V			312003	357001	AGC 3	4405
M4	3AG	3/10A 250V			313.300	357001	AGC 3/10	4405

SIGNAL DIODES

ITEM No.	ORIG. TYPE	deFOREST PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M5			6GC1			Horiz. AFC, Dual Selenium, Common Cathode Type
M6	1N80			1N80	1N80	Video Det., Pigtail
M7	1N80			1N80	1N80	Ratio Det., Pigtail
M8	1N8C			1N80	1N80	Ratio Det., Pigtail

MISCELLANEOUS

ITEM No.	PART NAME	deFOREST PART No.	NOTES
M9	Tuner (VHF)	TU-104	STANDARD COIL REPLACEMENT Type #GG8-422-A

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-In	Use BELDEN No. 8230 or 8375
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

FM TUNER PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	GENERAL ELECTRIC TYPE	RAYTHEON TYPE	SYLVANIA TYPE
V14 V15	FM RF Amp. - FM Conv. 1st FM IF Amp.	6AQ6 6BA6		
V16 V17	2nd FM IF Amp. Ratio Detector			6BA6 6AL5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT	deFOREST PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C73	5	50		PRS310	BBR5-50	TC30	TD-5-50	TVA-1303	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C74	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C75	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C76	8.2		NPO-DI	±.5mmf	NPO-DI 8.2		C10V82C			10TCC-V82
C77	1000				BPD-001	DD-102	BYA10D1	CCD-102	B-310	5HK-D10
C78	18		NPO	5%		TCZ-18	C10Q18C		CNO-418	10TCC-Q18
C79A	15		N150	5%			*			10TCP-Q15
B	15		N150	5%			*			10TCP-Q15
C80	8.2		N470	±.5mmf			*			
C81	6.8		N750	±.25mmf			C10V68U		CNO-568	
C82	5		N750	5%		DTN-5	C10V5U	CCTN-050	CN7-550	10TCU-V50
C83	3.6		NPO	±.25mmf	NPO-DI 3.3	DTZ-33G	C10V33C	CCTO-333	CNO-533	10TCC-V33
C84	22		N750	5%		DTN-22	C10Q27U		CN7-422	10TCU-Q22
C85	1000				BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C86	56		N750	5%		TCN-56	C10Q56U		CN7-456	10TCU-Q56
C87										
C88	1000				EF-001	MFT-1000		CCF-102	CT280A	
C89	1000				EF-001	MFT-1000		CCF-102	CT280A	
C90	10000				BPD-01	DD-103	BYA10E	CCD-103	B-110	5HK-S10
C91	1000				EF-001	MFT-1000		CCF-102	CT280A	
C92	10000				BPD-01	DD-103	BYA10E	CCD-103	B-110	5HK-S10
C93	1000				EF-001	MFT-1000		CCF-102	CT280A	
C94	5			10%	1469-000005	TCZ-4N7	22R5V5	CM-10D-050K	MCB305	M5-55
C95	4700				BPD-0047	DD-472	BYA10D47M	CCD-473	B-347	5HK-D47
C96	4700				BPD-0047	DD-472	BYA10D47M	CCD-472	B-347	5HK-D47
C97	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C98	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C99	4700				BPD-0047	DD-472	BYA10D47M	CCD-473	B-347	5HK-D47
C100	4700				BPD-0047	DD-472	BYA10D47M	CCD-472	B-347	5HK-D47
C101	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C102	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C103	470				BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C104	1500				BPD-0015	DD-152	BYA10D5	CCD-152	B-215	5HK-D15
C105	10000				BPD-01	DD-103	BYA10E	CCD-103	B-110	5HK-S10
C106	4700				BPD-0047	DD-472	BYA10D47M	CCD-472	B-215	5HK-D47
C107	10000				BPD-01	DD-103	BYA10E	CCD-103	B-110	5HK-S10

* Not normally in distributor's stock. Available thru distributor or order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R79	470K			
R80	470K			
R81	56Ω			
R82	10K			
R83	4.7meg			
R84	220K			
R85	100K			
R86	10K			
R87	120K			
R88	1000Ω			
R89	100Ω			
R90	470K			
R91	1000Ω			
R92	100Ω			
R93	56Ω			
R94	22K			
R95	12K			
R96	12K			
R97	2.2meg			
R98	2200Ω			

COILS (RF-IF)

ITEM No.	USE	deFOREST PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L15	2nd IF		FM-254	1463	RTC-8599	T633	
L16	Ratio Detector		FM-255	1465	RTC-8600	T635	
L17	Fil. Choke (1.5uh)		BC-563	4604	RTC-8516	T656	

SIGNAL DIODES

ITEM No.	ORIG. TYPE	deFOREST PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M10						AFC Diode

MISCELLANEOUS

ITEM No.	PART NAME	deFOREST PART No.	NOTES
M11	Switch		Function Selector

PHONO CARTRIDGE & NEEDLES

"NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY

ITEM No.	deFOREST PART No. CARTRIDGE	deFOREST PART No. NEEDLE*	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE*	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE*	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE*	NOTES
M12			80-TS-TB	N7-7 * N8-3 *	26S *		8TA4-S	N-8TA-S *	

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors

PREAMP PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	GENERAL ELECTRIC TYPE	RAYTHEON TYPE	SYLVANIA TYPE
V18	Left Channel AF Amp. - Right Channel AF Amp.	12AX7		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	deFOREST PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C108	25	6		PRS250	BBR25-6	TC36	TD-25-25	TVA-1305	
C109	25	6		PRS250	BBR25-6	TC36	TD-25-25	TVA-1305	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C110	470			BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C111	.0047	600V		P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C112	.001	200V		P288N-001	D6-102	CUB6D1	6DP-1-102	GEM-62	6TM-D10
C113	.01	200V		P288N-01	D6-103	CUB6S1	6DP-1-103	GEM-611	6TM-S10
C114	.01	300V		P288M-01	D6-103	CUB6S1	6DP-1-103	GEM-611	6TM-S10
C115	470			BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C116	.0047	600V		P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C117	.001	200V		P288N-001	D6-102	CUB6D1	6DP-1-102	GEM-62	6TM-D10
C118	.01	200V		P288N-01	D6-103	CUB6S1	6DP-1-103	GEM-611	6TM-S10
C119	.01	300V		P288M-01	D6-103	CUB6S1	6DP-1-103	GEM-611	6TM-S10

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	deFOREST PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS - IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R99A	2meg			B-75	AD47-2meg-S		FA26L	Volume, Right Channel
B	2meg			SR-75	Not Req.		RU26L	Volume, Left Channel
C	Shaft			Not Req.	KSS-3		CS3500	
R100A	2meg			B-75	AD47-2meg-S		FA26L	Bass, Left Channel
B	2meg			SR-75	Not Req.		RU26L	Bass, Right Channel
C	Shaft			Not Req.	KSS-3		CS3500	
R101A	2meg			B-75	AD47-2meg-S		FA26L	Treble, Left Channel
B	2meg			SR-75	Not Req.		RU26L	Treble, Right Channel
C	Shaft			Not Req.	KSS-3		CS3500	
R102A	2meg			B-75	AD47-2meg-S		FA26L	Balance, Left Channel
B	2meg			SR-75	Not Req.		RU26L	Balance, Right Channel
C	Shaft			Not Req.	KSS-3		CS3500	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R103	680K			
R104	220K			
R105	47000Ω			
R106	220K			
R107	22K			
R108	680K			
R109	220K			
R110	47000Ω			
R111	220K			
R112	22K			

deFOREST MODEL DKW

FOLDER 1

POWER AMP PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (GENERAL ELECTRIC • RAYTHEON • SYLVANIA)
V19	Left Channel AF Amp. - Phase Inverter	12AU7A
V20	Left Channel Output	6V6GT
V21	Left Channel Output	6V6GT
V22	Right Channel AF Amp. - Phase Inverter	12AU7A
V23	Right Channel Output	6V6GT
V24	Right Channel Output	6V6GT

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA deFOREST PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C120	200	200		AFHS1-31-85	XA0318	FP126	TMS-1490	TVL-1547	
C121A	200	350		AFHS3-29-87	B0286			TVLS-2593 *	
B	60	200							
C122	60	150		PRS1490	BR6015	TC68	TD-60-250	TVA-1415	
C123	25	6		PRS1260	BBR25-6	TC26	TD-25-25	TVA-1205	
C124	25	6		PRS1260	BBR25-6	TC26	TD-25-25	TVA-1205	
C125	4	10NP		PRS7405	BBR4-150	TCN504		TVANS-1150 *	
C126	4	10NP		PRS7405	BBR4-150	TCN504		TVANS-1150 *	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C127	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C128	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C129	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C130	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C131	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C132	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C133	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R113	470K			
R114	3900Ω			
R115	47K			
R116	47K			
R117	470K			
R118	470K			
R119	180Ω 1W			
R120	470K			
R121	3900Ω			
R122	47K			
R123	47K			
R124	470K			
R125	470K			
R126	180Ω 1W			
R127	15K 1W			
R128	4600Ω 4W	PW4-4000	4G-4000	
R129	7.5Ω 5W	PW5-7.5	5W-SQ-7.5	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA deFOREST PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T6	117V	6.3V			P-2947 ①②	P-6456 ①②		F-43X ①②	①Drill new mounting hole(s). ②Tape CT on 6.3V winding.
	② .25A	② 4A							

TRANSFORMER (AUDIO OUTPUT)

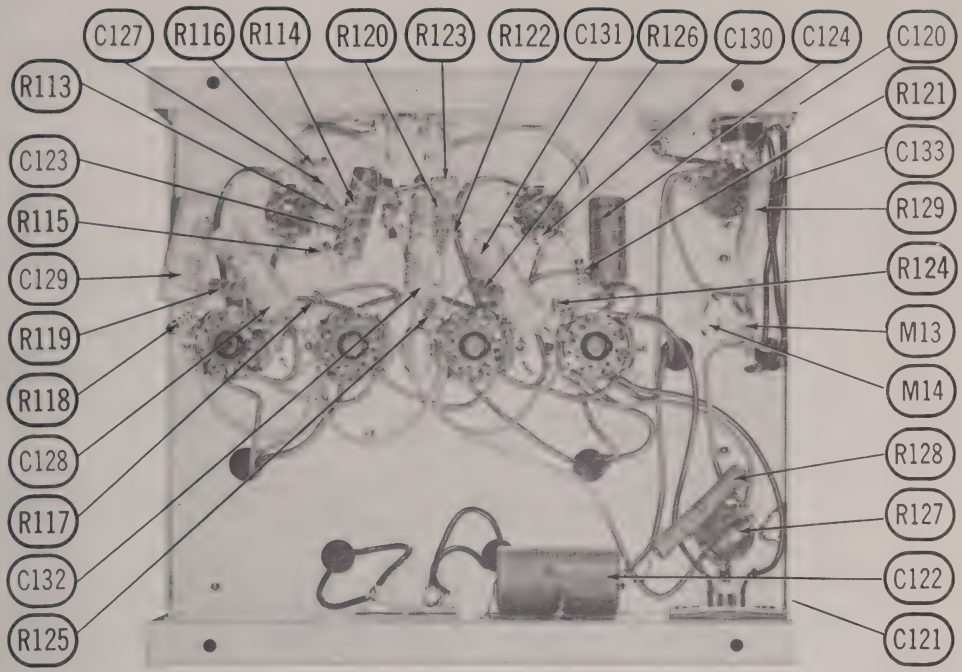
ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA deFOREST PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T7	9400Ω CT	1-2Ω		A-2905	A-3880	24S42	S-57Z ①	①Drill new mounting hole(s).
T8	9400Ω CT	1-2Ω		A-2905	A-3880	24S42	S-57Z ①	

SPEAKER

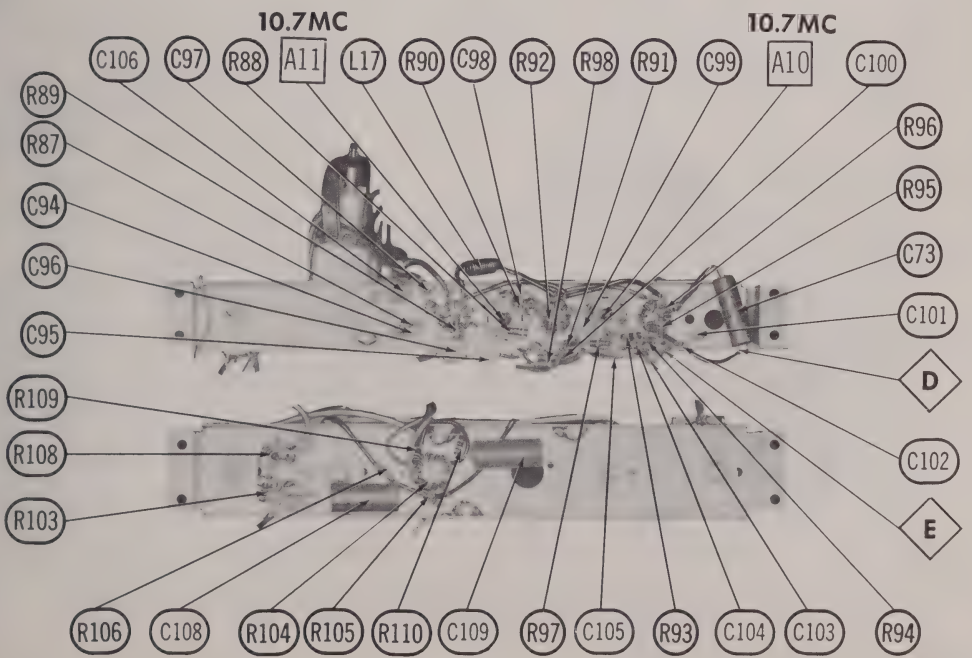
ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA deFOREST PART No.	QUAM PART No.	NOTES
SP1	8"	PM	1-2Ω		8A21	
SP2	4"	PM	3-4Ω		4A1	
SP3	8"	PM	1-2Ω		8A21	
SP4	4"	PM	3-4Ω		4A1	

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA deFOREST PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M13	.200A		1N1763	F4	SR500	
M14	.200A		1N1763	F4	SR500	



POWER AMP CHASSIS - BOTTOM VIEW



FM TUNER & PREAMP CHASSIS - REAR VIEW

FM TUNER ALIGNMENT INSTRUCTIONS

FM TUNER ALIGNMENT

Use only enough generator output to provide a usable indication.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM - SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	Across FM Antenna Terminals.	10.7MC (Unmod.)	Point of non-interference	DC probe to point Ⓓ. Common to chassis.	A10, A11, A12, A13, A14	Adjust for maximum deflection.
2.	"	"	"	DC probe to point Ⓔ. Common to chassis.	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE - SELECTOR IN FM POSITION

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	Across FM Antenna Terminals.	10.7MC (450KC Swp.)	Point of non-interference	Vert. Amp. to point Ⓓ. Low side to chassis.	A10, A11, A12, A13, A14	Disconnect Stabilizing Capacitor C73. Adjust for maximum gain and symmetry of response similar to Fig. 3 with markers as shown. Reconnect C73.
2.	"	"	"	Vert. Amp. to point Ⓔ. Low side to chassis.	A15	Adjust to place marker at the center of crossover lines similar to Fig. 4. SLIGHTLY retouch A10 for maximum amplitude and straightness of cross-over lines.

FIG. 3

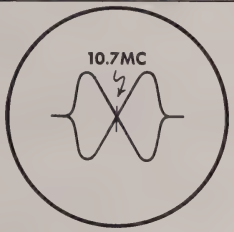
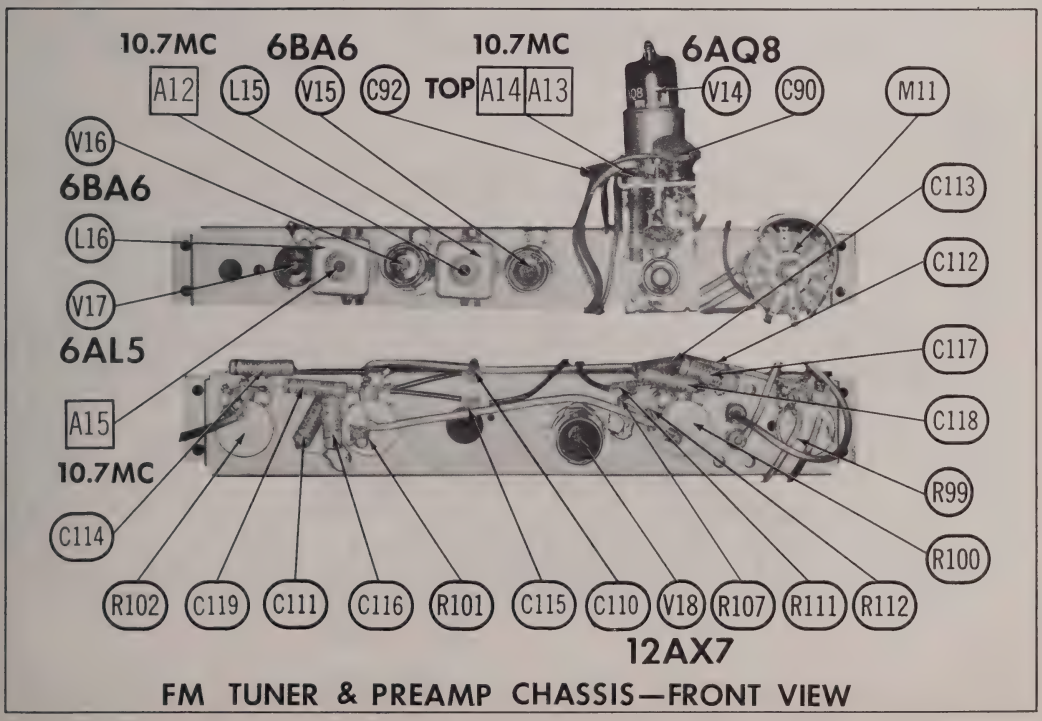


FIG. 4

SEE PAGE 13 FOR ADDITIONAL ALIGN. IDENT. PHOTO



FM TUNER & PREAMP CHASSIS—FRONT VIEW

VHF TUNER PARTS LIST AND DESCRIPTIONS

TU–104

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amplifier	2ER5/GG	V202	Mixer - Osc.	5CG8

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	27 N750		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	
C202	27 N750		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	
C203	27 N750		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	
C204	27 N750		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	
C205								
C206								
C207	1000		EF-001	MFT-1000		CCF-102	CT280A	
C208								
C209								
C210								
C211								
C212								
C213								
C214								
C215								
C216	1000		EF-001	MFT-1000		CCF-102	CT280A	
C217	1000		EF-001	MFT-1000		CCF-102	CT280A	
C218	1000		EF-001	MFT-1000		CCF-102	CT280A	
C219	1000		EF-001	MFT-1000		CCF-102	CT280A	
C220	1000		EF-001	MFT-1000		CCF-102	CT280A	

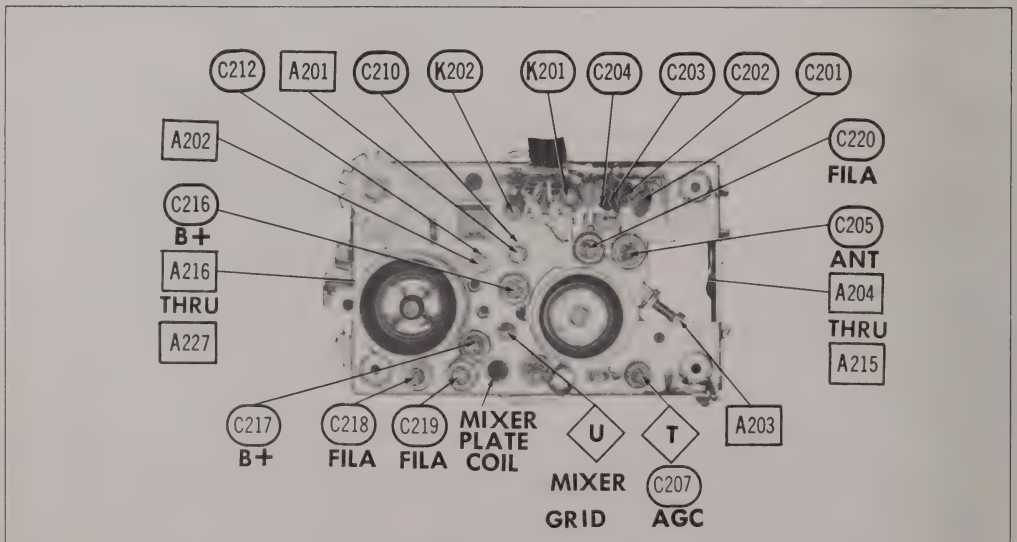
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

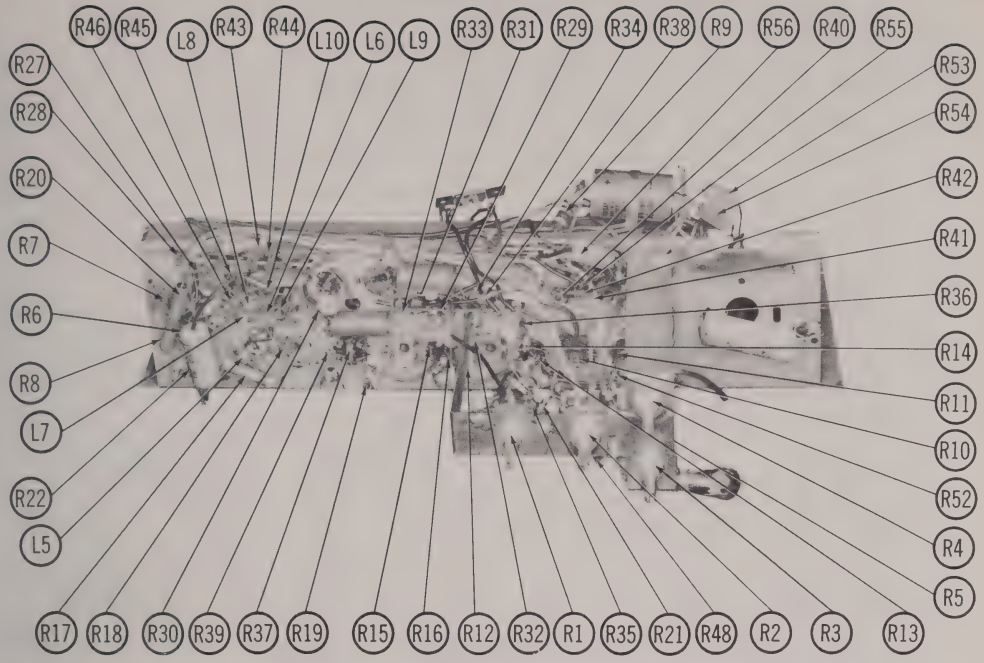
ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R201	47K				R205	1000Ω			
R202	1000Ω				R206	4700Ω			
R203	220K				R207	4700Ω			
R204	2700Ω								

COMPONENT COMBINATIONS

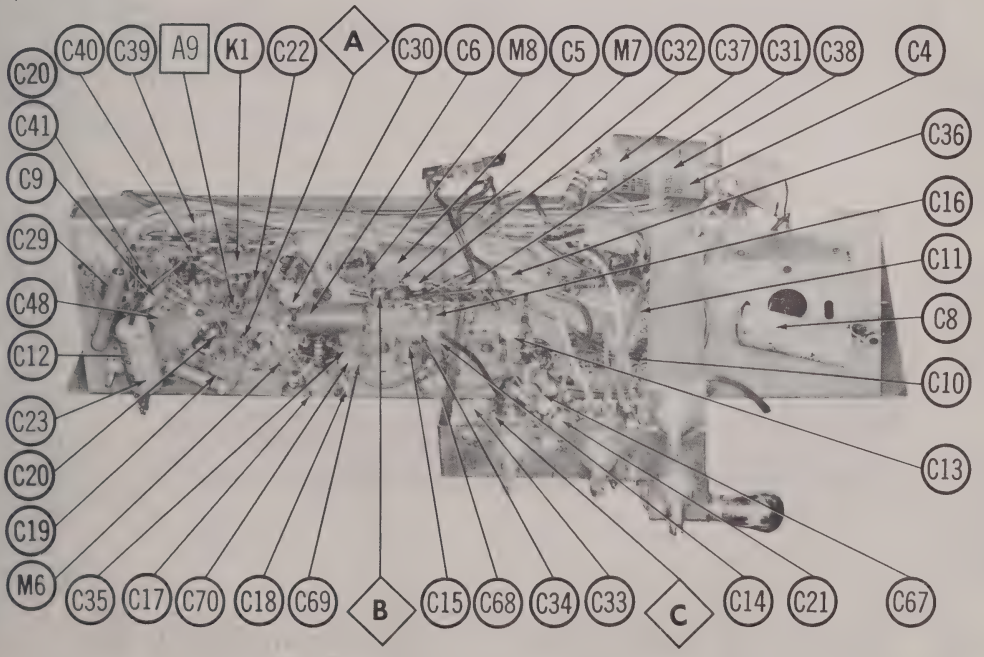
ITEM No.	USE	DESCRIPTION	deFOREST PART No.	REPLACEMENT DATA
K201	Antenna Filter	470mmf, .3-1meg		Centralab RC-471 Sprague AC1-1
K202	Antenna Filter	470mmf, .3-1meg		Centralab RC-471 Sprague AC1-1



VHF TUNER TU–104 — TOP VIEW



VIDEO, SOUND, AGC, SYNC CHASSIS - RESISTOR & INDUCTOR IDENT.



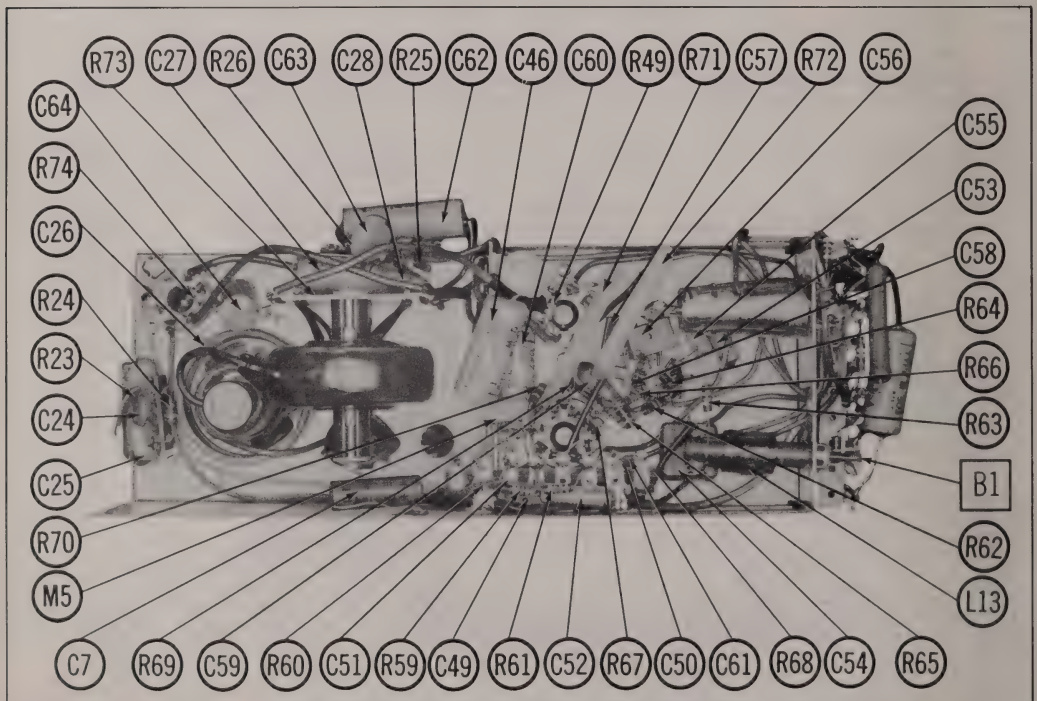
VIDEO, SOUND, AGC, SYNC CHASSIS - CAPACITOR, MISC., ALIGN. IDENT.

RESISTANCE MEASUREMENTS

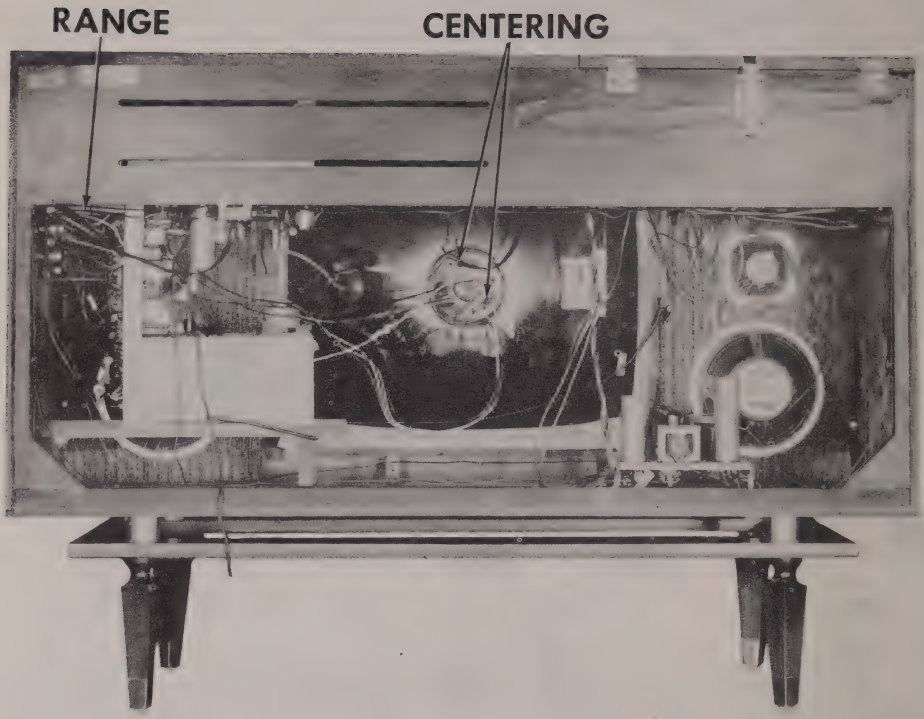
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BZ6	330K	56Ω	12Ω	13Ω	▪ 1000Ω	▪ 1000Ω	0Ω		
V2	3BZ6	330K	56Ω	13Ω	14Ω	▪ 1000Ω	▪ 1000Ω	0Ω		
V3	6AW8A	2200Ω	470K	† 220K	16Ω	14Ω	180Ω	.1Ω	▪ 22K	† 8200Ω
V4	6AW8A	0Ω	1.5meg	▪ 150K	18Ω	16Ω	• 60Ω	3900Ω	▪ 0Ω	† 4000Ω
V5	3AU6	• 80K	▪ 0Ω	5Ω	6Ω	1.3meg	† 30Ω	▪ 0Ω		
V6	3AU6	470K	0Ω	19Ω	18Ω	▪ 1000Ω	▪ 1000Ω	100Ω		
V7	12C5/ 12CU5	¶ 80K	900K	0Ω	2Ω	900K	† 300Ω	† 700Ω		
V8	10DE7	† 745Ω	• 1.5meg	• 1.5meg	9Ω	10Ω	• ǂ 1.5meg	• 1.3meg	130Ω	380Ω
V9	6CG7	† 50K	6meg	1000Ω	9Ω	8Ω	ǂ 110K	• 100K	1000Ω	0Ω
V10	12DQ6A	NC	5Ω	TP	† 5800Ω	1meg	TP	3Ω	200Ω	TOP CAP ǂ 13Ω
V11	19AU4GTA	TP	NC	2meg	TP	† 30Ω	NC	6Ω	8Ω	
V12	1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP ǂ 105Ω
V13	23GP4	3Ω	22K	ǂ 900K	▪ 0Ω	NC	NC	• 150K	2Ω	
V201	2ER5/GG	0Ω	2meg	10Ω	11Ω	† 6000Ω	0Ω	0Ω		
V202	5CG8	4700Ω	▪ 4700Ω	0Ω	12Ω	11Ω	† 6000Ω	▪ 0Ω	0Ω	220K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM OUTPUT OF M1.
ǂ MEASURED FROM PIN 3 OF V11.
▪ MEASURED FROM PIN 1 OF V7.

NC NO CONNECTION
TP TIE POINT



HORIZONTAL SWEEP CHASSIS



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a station, preferably with a test pattern.

Set the Horizontal Hold Control at the center of its range and adjust the Horizontal Frequency Slug (B1) until the picture synchronizes horizontally.

Check Horizontal Sync on other channels and if necessary, retouch B1 for best sync on all channels.

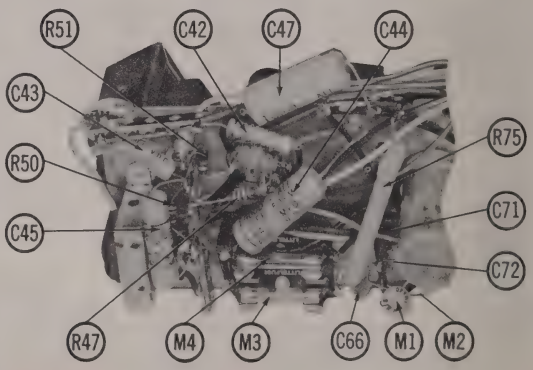
DISASSEMBLY INSTRUCTIONS

TV CHASSIS REMOVAL

1. Remove 11 wood screws holding rear cover. Remove rear cover.
2. Remove 6 push-on type knobs at side of cabinet.
3. Remove picture tube socket, yoke plug, hi voltage lead, and speaker leads.
4. Remove picture tube grounding spring.
5. Remove 2 screws (at top) and 3 screws (at bottom) holding wooden braces securing chassis to cabinet.
6. Remove chassis.

PICTURE TUBE REMOVAL

It is necessary to remove the TV chassis for picture tube removal.



LV SUPPLY & VERT SWEEP CHASSIS

PHOTOFACT® Folder with CIRCUITRACE®

RCA VICTOR CHASSIS KCS131C, D, E, T, U, W, ZD, ZE, ZF

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

RCA VICTOR CHASSIS KCS131C, D, E, T, U, W, ZD, ZE, ZF

MODEL 211B326SU (CH. KCS131E)

RCA VICTOR CHASSIS KCS131C, D, E, T, U, W, ZD, ZE, ZF

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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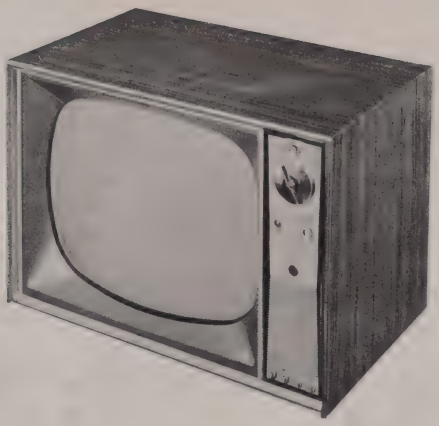
SET 527 FOLDER 2



MODEL 211B326SU (CH. KCS131E)

TRADE NAME	RCA Victor	Model	Chassis	Tuner
		211B325, 211B326, 211B327	KCS131C	KRK96D
		211B325U, 211B326U, 211B327U	KCS131D	KRK97D and KRK66AC
		211B325SU, 211B326SU	KCS131E	KRK87M
		211D405, 211D406, 211D407, 211D409, 211D485, 211D486, 211D487, 211D505, 211D506, 211D507, 211D40C4	KCS131T	KRK96B
		211D406U, 211D505U, 211D506U, 211D507U	KCS131U	KRK97B and KRK66AC
		211D406SU, 211D505SU, 211D506SU, 211D507SU	KCS131W	KRK87P
		211B312	KCS131ZD	KRK96A
		211B312U	KCS131ZE	KRK97A and KRK66AC
		211B312SU	KCS131ZF	KRK87R

MANUFACTURER	Radio Corporation of America, RCA Victor Tele. Div., Camden 8, N. J.
TYPE SET	Television Receiver
TUBES	VHF - Eighteen, UHF - Nineteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING VHF - 200 Watts, 1.8 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

Remove 6 screws holding the trim strip at the top edge of the safety glass. Tilt glass out and remove.

FUSE DEVICE

Two fuse wires are used for filament protection. (For location, see M1 and M2 in photo "LV Supply and Horizontal Output Section, Page 19.)

A fusible resistor is used for Vert.-Horiz. Sweep protection. (For location, see "Tube Placement Chart".)

TUNER OSCILLATOR ADJUSTMENT

To touch up VHF Oscillator, remove Channel Selector Knob.

AGC

The AGC may be varied by means of an AGC Control. (For location, see "Tube Placement Chart".)

FOCUS

The focus may be varied by means of a Focus Control. (For location, see "Tube Placement Chart".)

SYNC STABILITY

Sync stability may be varied by means of a Sync Stabilizing Control. (For location, see "Tube Placement Chart".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horiz. Stabilizing Coil Slug. (For location, see "Tube Placement Chart".)

WIDTH

The width may be varied by a Width Coil. (For location, see "Tube Placement Chart".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

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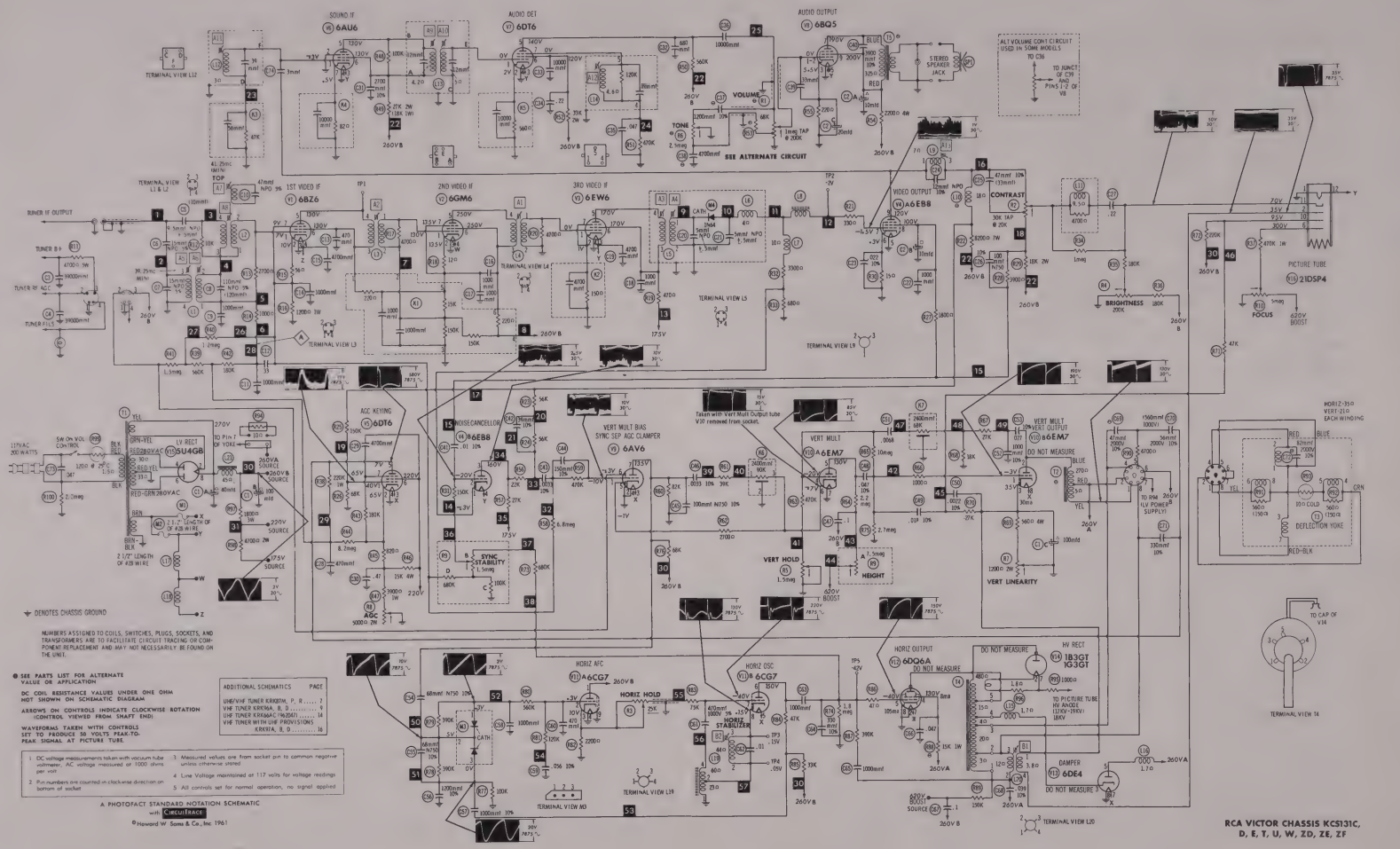
KA572

RCA VICTOR CHASSIS KCS131C, D, E, T, U, W, ZD, ZE, ZF

SET 527 FOLDER 2

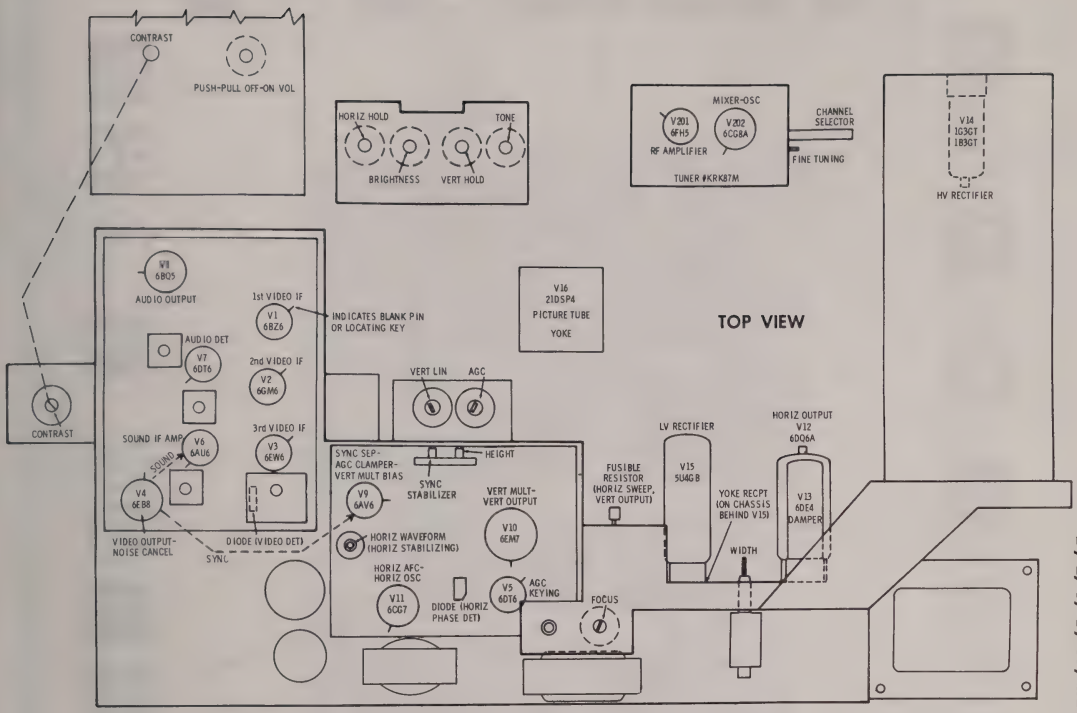


RCA VICTOR CHASSIS KCS131C, D, E, T, U, W, ZD, ZE, ZF

RCA VICTOR CHASSIS KCS131C, D, E, T, U, W, ZD, ZE, ZF

FOLDER 2

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

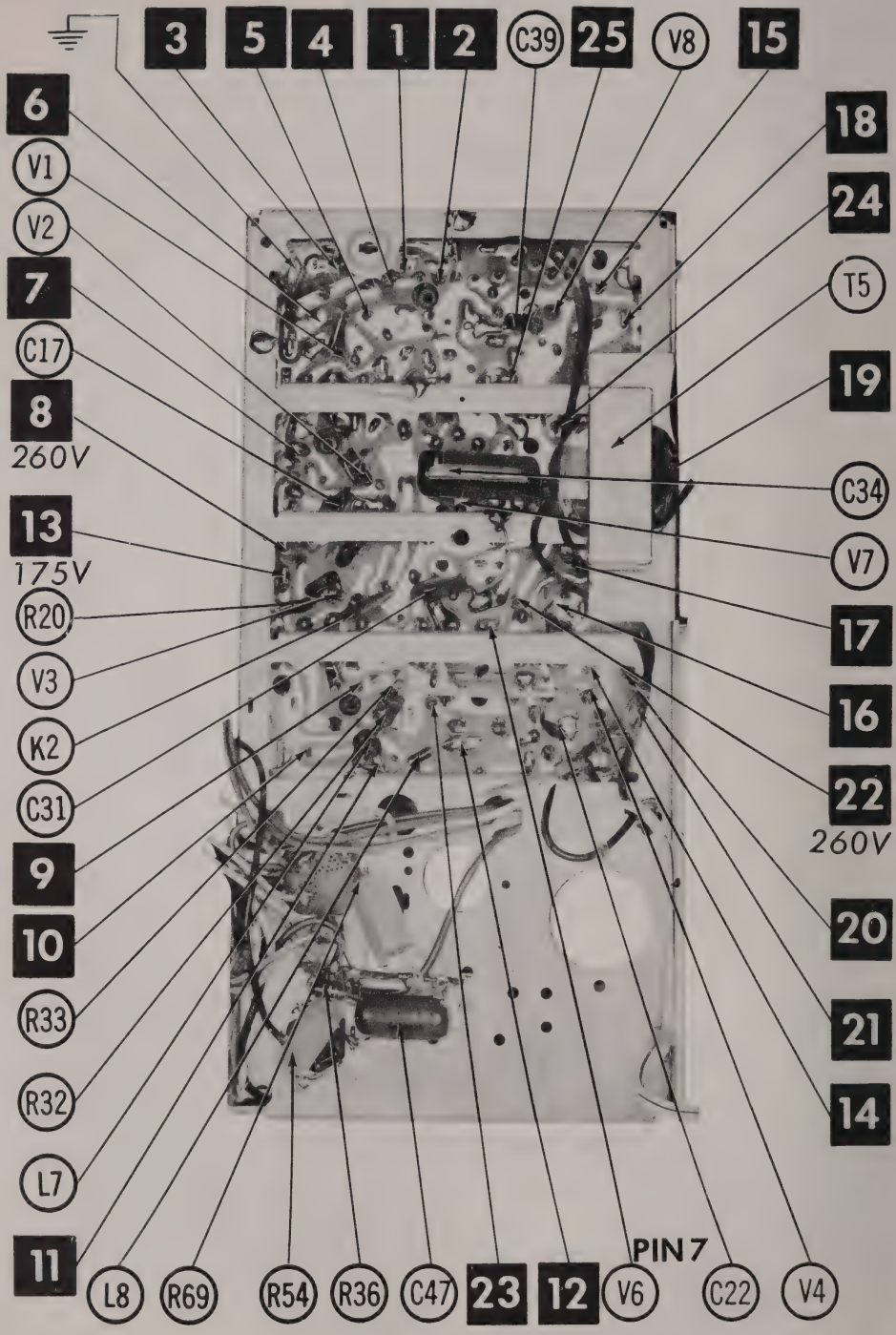
The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound V15, Fuse Wires (Fil.)

SWEEP FAILURE
No raster, has sound Fuse (Horiz. - Vert. Sweep), V11, V12, V13, V14, V16
No vertical deflection V9, V10
Poor vert. linearity or foldover V9, V10
Poor horiz. linearity or foldover V11, V12, V13
Narrow picture V11, V12, V13, V15
Vert. off freq. V9, V10
Horiz. off freq. Diode (Horiz. Phase Det.), V11

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, Diode (Video Det.), V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V16
Has pic, no sound V6, V7, V8
Overloaded picture V5

SYNC FAILURE
No vert. sync V9
No horiz. sync V9
No vert. or horiz. sync V9



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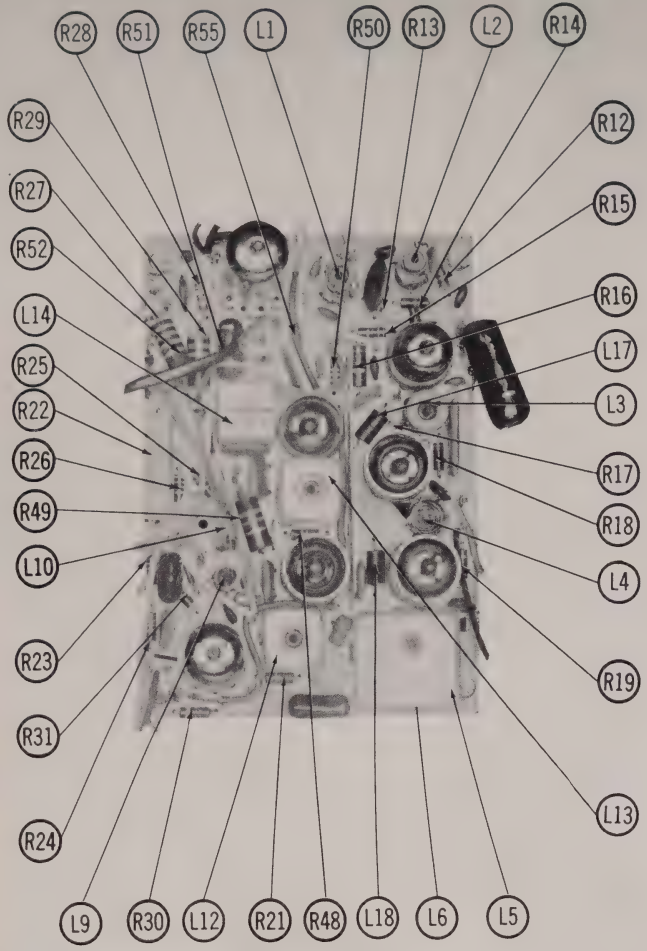
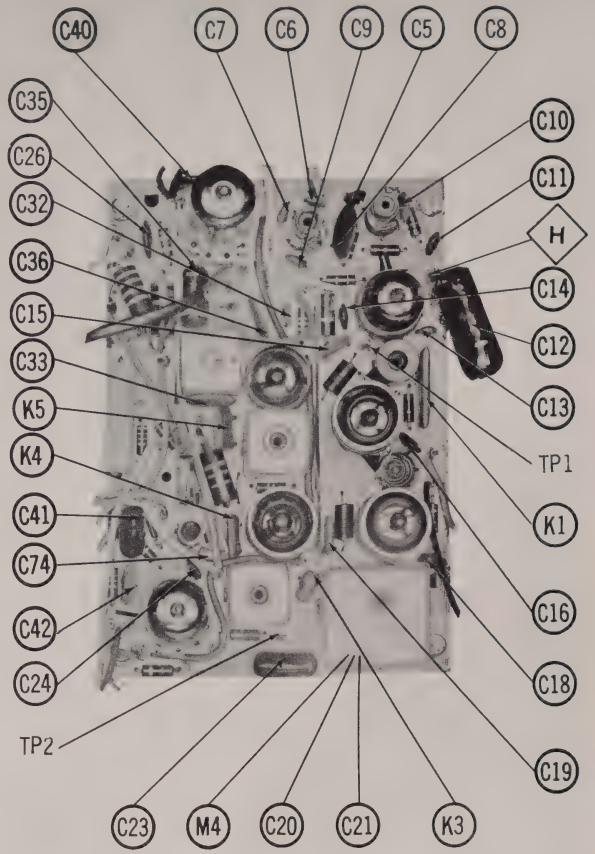
MAIN PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



MAIN PRINTED BOARD
RESISTOR & INDUCTOR IDENT.

TP1 130V 1st IF PLATE
TP2 -2V VIDEO OUTPUT GRID



MAIN PRINTED BOARD
TEST POINT, CAPACITOR, MISC. IDENT.

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: GENERAL CEMENT #8282, 8606, 8606L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Connect a clip lead from point Ⓐ to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough generator output to provide a usable indication.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Place a thin insulated metal strip between the Mixer Osc. tube and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	Not used	45.5MC (Unmod.)	Any non-interfering channel	Use VTVM DC probe to TP-2. Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	43.0MC	"	"	A2	"
3.	"	45MC (10MC Sweep)	41.25MC 45.75MC	"	Vert. Amp. of scope to TP-1. Low side to chassis.	A3, A4	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
4.	High side to pin 1 (grid) of 3rd Video IF. Low side to chassis.	Not used	47.25MC	"	Use VTVM DC probe to TP-2. Common to chassis.	A5	Adjust for MINIMUM deflection.
5.	Place a thin insulated metal strip between the Mixer Osc. tube and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	"	39.25MC	"	"	A6	"
6.	"	"	41.25MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the negative lead of a 3.5 volt bias supply to point Ⓣ. Positive to chassis.
Connect negative lead of a variable bias supply to point Ⓐ. Positive side to chassis. Adjust for zero volts bias.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Place a thin insulated metal strip between the Mixer-Osc. tube and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	45MC (10MC Swp.)	42.5MC 45.75MC	Any non-interfering channel	Vert. Amp. thru .001mfd to TP-1. Low side to chassis. Connect a 180Ω resistor across scope leads.	Mixer Plate Coil and A8	Adjust for maximum gain and symmetry of response similar to Fig. 2 with markers as shown. Repeat step 4 above.
8.	"	"	42.5MC 45.0MC 45.75MC	"	Vert. Amp. to TP-2. Low side to chassis. Remove resistor from across scope leads.		Change Bias at point Ⓐ to -6 volts. Retouch A1 thru A4 for response similar to Fig. 3.
9.	High side thru pad (Fig. 4) to Mixer Grid. Low side to chassis.	Not used	45.75MC (Unmod.)	"	Use VTVM DC probe to TP-2. Common to chassis.		Adjust generator output for exactly 1.5 volts on VTVM.
10.	High side direct to Mixer Grid. Low side to chassis.	"	41.25MC (Unmod.)	"	"		Retouch A2, A3 and A4 for 1.2 to 1.5 volts on VTVM. Check for response curve in step 8.
11.	Across antenna terminals thru matching pad (Fig. 5).	Each VHF Channel in turn.	42.5MC 45.0MC 45.75MC	"	Vert. Amp. to TP-2. Low side to chassis.		Retouch A1, A3 and A4 slightly for correct overall tilt.

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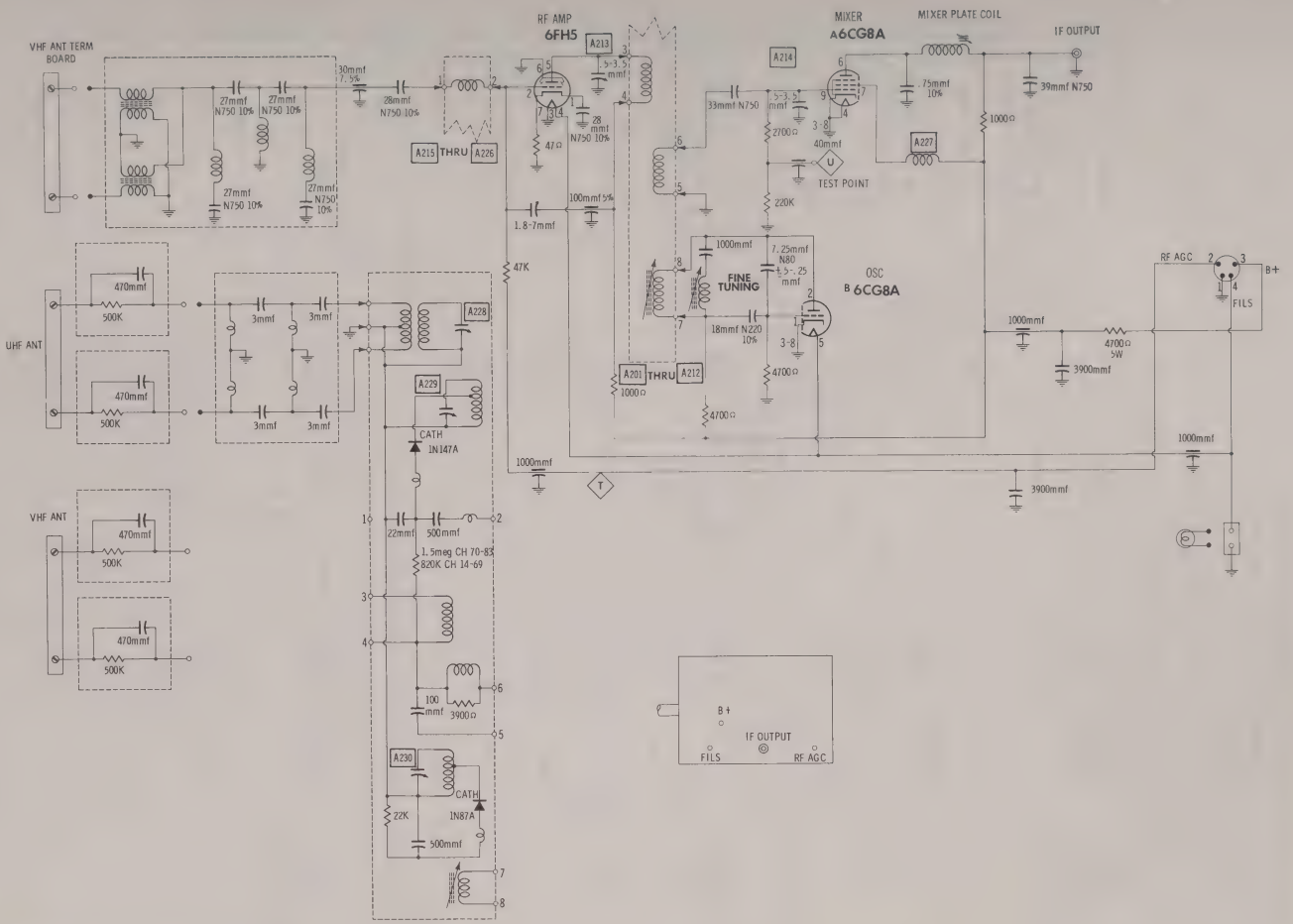

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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UHF/VHF TUNER KRK87M, P, R

RCA VICTOR CHASSIS KCS131C,
D, E, T, U, W, ZD, ZE, ZF

TUNER ALIGNMENT INSTRUCTIONS

KRK96, 97

PRE-ALIGNMENT INSTRUCTIONS FOR TUNERS #KRK96 AND KRK97

Allow a 20 minute warm-up period for the receiver and test equipment.

VHF RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.
Connect the negative lead of a 2.5volt bias supply to point (T). Positive to chassis.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across VHF Antenna Terminals thru pad (Fig. 501).	183MC	181.25MC 185.75MC	8	Vert. Amp. to point (U). Low side to chassis.	A501, A502	Adjust for maximum gain and symmetry of response similar to Fig. 502 with markers as shown. If oscillation is obtained and distorts the waveform, adjust A503 for MINIMUM gain and repeat adjustment of 501 and 502.
2.	"	195MC		10	"	A503	Increase bias to -10 to 15 volts. Adjust A503 for MINIMUM response.
3.	"	183MC	181.25MC 185.75MC	8	"	A501, A502, A504	Adjust A501 for proper frequency, A502 for A502 for proper tilt and A504 for proper bandwidth.
4.	"	213MC	211.25MC 215.75MC	13	"	A505, A506	Adjust A505 for proper frequency and A506 for proper tilt.
5.	"	"	"	"	"	A507	Adjust for maximum gain at center of response. Repeat steps 3 and 4.
6.	Turn generator off.				Use VTVM DC probe to point (V). Common to chassis.		With generator turned off, measure oscillator injection voltage. It should be between -2 and -5 volts.
7.	Across VHF Antenna Terminals thru pad (Fig. 501).	85MC	83.25MC 87.75MC	6	Vert. Amp. of scope to point (U). Low side to chassis.	A508, A509, A510	Adjust for maximum gain and symmetry of response similar to Fig. 502 with markers as shown. First adjustment is for amplitude, second for frequency and third for tilt.
8.	"	79MC	77.25MC 81.75 MC	5	"	A511, A512, A513	"
9.	"	69MC	67.25MC 71.75MC	4	"	A514, A515, A516	"
10.	"	63MC	61.25MC 65.75MC	3	"	A517, A518, A519	"
11.	"	57MC	55.25MC 59.75MC	2	"	A520, A521, A522	"

VHF OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Connect the negative lead of a 2.5 volt bias supply to point (T). Positive to chassis.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Across VHF Antenna Terminals thru pad (Fig. 501).	Not Used	257MC	13	Vert. Amp. to point (U). Low side to chassis.	A523	Adjust for zero beat.
13.	"	"	251MC	12	"	A524	"
14.	"	"	245MC	11	"	A525	"
15.	"	"	239MC	10	"	A526	"
16.	"	"	233MC	9	"	A527	"
17.	"	"	227MC	8	"	A528	"
18.	"	"	221MC	7	"	A529	"
19.	"	"	129MC	6	"	A530	"
20.	"	"	123MC	5	"	A531	"
21.	"	"	113MC	4	"	A532	"
22.	"	"	107MC	3	"	A533	"
23.	"	"	101MC	2	"	A534	"

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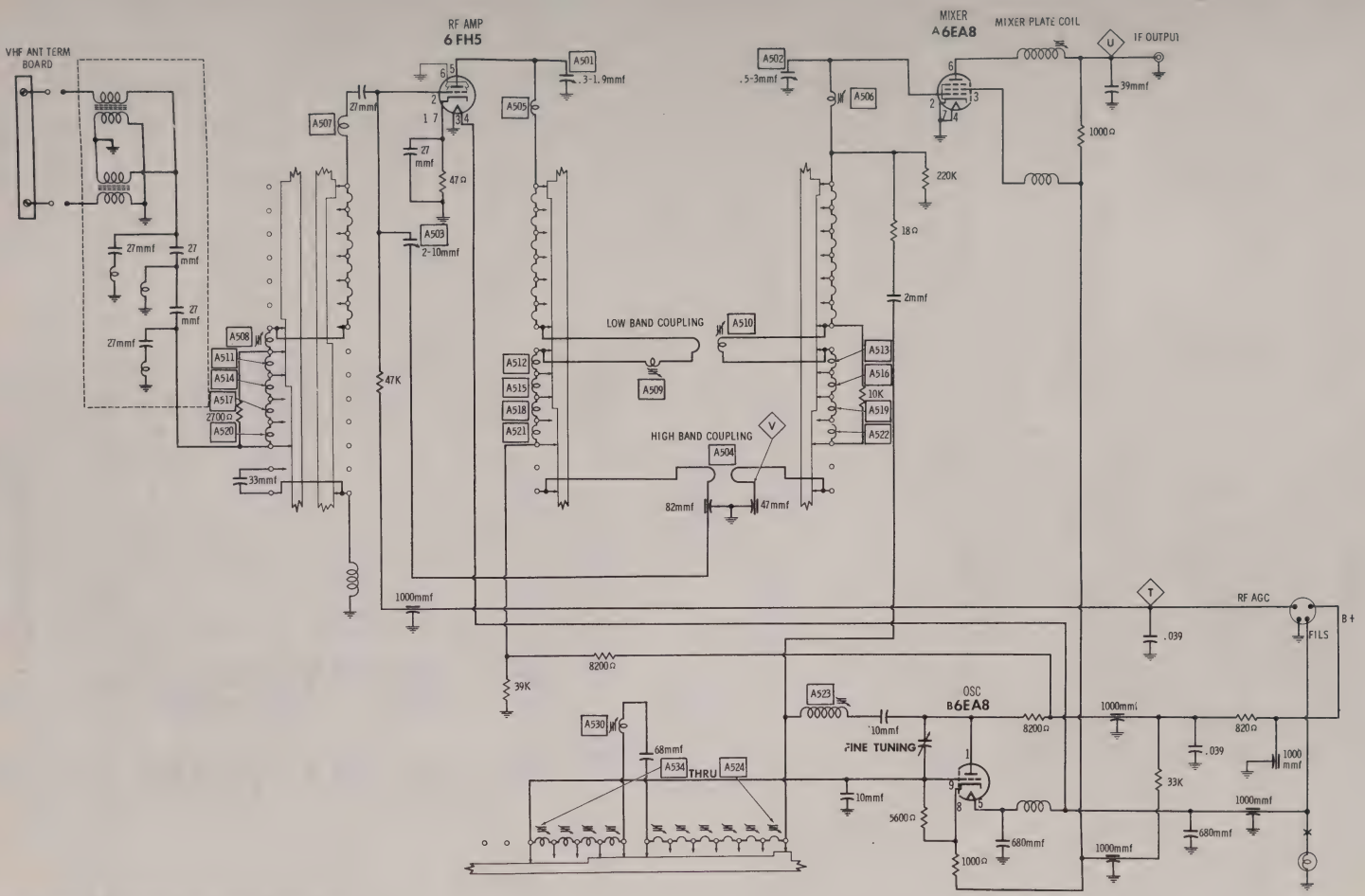

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VHF TUNER KRK96A, B, D

RCA VICTOR CHASSIS KCS131C,
D, E, T, U, W, ZD, ZE, ZF

TUNER ALIGNMENT INSTRUCTIONS
KRK87

PRE-ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: A201 thru A212 .... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A213, A214 ..... GENERAL CEMENT #8607, 9291, 9294
WALSCO #2520, 2522, 2523, 2524, 2534, 2537

VHF OSCILLATOR ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point Ⓣ. Positive to chassis.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Set Fine Tuning to the center for each channel by pushing in on the Fine Tuning knob and turning fully clockwise, then counterclockwise three (3) full turns. Repeat for each channel to be adjusted.
Connect a 39 ohm composition resistor in series with a 1000mmf capacitor across the tuner output jack.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across VHF antenna terminals thru matching pad (See Fig. 201).	257MC	13	Vert. Amp. thru 10K to point Ⓓ. Low side to chassis.	A201	Adjust for zero beat.
	"	251MC	12	"	A202	"
	"	245MC	11	"	A203	"
	"	239MC	10	"	A204	"
	"	233MC	9	"	A205	"
	"	227MC	8	"	A206	"
	"	221MC	7	"	A207	"
	"	129MC	6	"	A208	"
	"	123MC	5	"	A209	"
	"	113MC	4	"	A210	"
	"	107MC	3	"	A211	"
	"	101MC	2	"	A212	"

VHF RF AND MIXER ALIGNMENT

Connect Bias as under "VHF Oscillator Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Leave tuner output jack terminated as under "VHF Oscillator Alignment".

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
2.	Across VHF antenna terminals thru matching pad (Fig. 201).	195MC (10MC Swp.)	193.25MC 197.75MC	10	Vert. Amp. thru 10K to point Ⓓ. Low side to chassis.	A213, A214	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown.
	"	213MC	211.25MC 215.75MC	13	"	A215	If necessary, adjust to correct for improper tilt.
	"	207MC	205.25MC 209.75MC	12		A216	Adjust by expanding or compressing coil turns.
	"	201MC	199.25MC 203.75MC	11		A217	"
	"	195MC	193.25MC 197.75MC	10		A218	"
	"	189MC	187.25MC 191.75MC	9		A219	"
	"	183MC	181.25MC 185.75MC	8		A220	"
	"	177MC	175.25MC 179.75MC	7		A221	"
	"	85MC	83.25MC 87.75MC	6		A222	"
	"	79MC	77.25MC 81.75MC	5		A223	"
	"	69MC	67.25MC 71.75MC	4		A224	"
	"	63MC	61.25MC 65.75MC	3		A225	"
	"	57MC	55.25MC 59.75MC	2		A226	"

If bandwidth is out of limits on most high VHF channels (7-13), adjust A227 by expanding or compressing coil turns.

CONTINUED PAGE 15

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	6BZ6	V9	Sync Sep. - AGC Clamper - Vert. Mult. Bias	6AV6
V2	2nd Video IF Amp.	6GM6	V10	Vert. Mult. - Vert. Output	6EM7
V3	3rd Video IF Amp.	6EW6	V11	Horiz. AFC - Horiz. Osc.	6CG7
V4	Video Output - Noise Canceller	6EB8	V12	Horiz. Output	6DQ6A
V5	AGC Keying	6DT6	V13	Damper	6DE4
V6	Sound IF Amp.	6AU6	V14	HV Rectifier	1G3GT/1B3GT
V7	Audio Detector	6DT6	V15	LV Rectifier	5U4GB
V8	Audio Output	6BQ5			

PICTURE TUBE

ITEM No.	REPLACEMENT DATA					NOTES
	RCA Victor PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V16	21DSP4		21DSP4 ①		21DSP4 ②	① Aluminized ② Silver Screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	400	109305	AFH3-122-10	B0715	FP333.2	TMD-2700	TVL-3683	
B	■100	400			BR10045		TD-100-50		
C	▲100	50							
C2A	▲10	400	78929	AFH3-125	C0910	FP345.2	TMT-3552	TVL-3731	
B	■10	350							
C	20	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	39000			DD-403	BYB6S4	6DP-3-403	GP140	6TM-S40
C4	39000			DD-403	BYB6S4	6DP-3-403	GP140	6TM-S40
C5	9.5 NPO ±.5mmf	(10mmf) *	NPO-DI 10	DTZ-10	C10Q10C	CCTO-100	CNO-410	10TCC-Q10
C6	15 NPO 5%			DTZ-15	C10Q15C		CNO-415	10TCC-Q15
C7	15 NPO 5%			DTZ-15	C10Q15C		CNO-415	10TCC-Q15
C8	110 NPO 5%	(120mmf) *		TCZ-110				
C9	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C10	47 NPO 5%			DTZ-47	C10Q47C		CNO-447	10TCC-Q47
C11	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C12	.33 200V		P288N-33		CUB6P33	2DP-5-334	GEM-2033	2PS-P33
C13	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C14	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C15	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C16	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C17	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C18	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C19	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C20	5 NPO ±.5mmf		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C21	5 NPO ±.5mmf		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C22	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C23	.022 200V 10%		V84C2S22-10%		PM4S22	4DP-2-223	GEM-1612	2TM-S22
C24	12 NPO 10%			TCZ-12	C10Q12C	CCTO-120	CNO-412	10TCC-Q12
C25	47 10%	(33mmf) *	DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C26	100 N750 10%		N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C27	.22 600V		P688N-22		CUB6P22	6DP-5-224	GEM-6022	6TM-P22
C28	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C29	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C30	.47 200V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C31	2700 10%		DI-2700		DPMS6D27	CCD-272		10TS-D27
C32	680		BPD-00068	DD-681	BYA10T68	CCD-681	B-368	10TS-T68
C33	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	.22 400V	.22 500V *	P488N-22		CUB4P22	4DP-5-224	GEM-4022	4TM-P22
C35	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C36	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C37	1200 10%	Note 1	DI-1200	DD-121	DPMS6D12	CCD-121	GP212	10TS-D12
C38	4700	Note 1	BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C39	33		DI-33	DD-330	L10Q33	CCD-330	GP433	10TS-Q33
C40	3900 10%		DI-4000		DPMS6D39	CCD-392	JL239	10TS-D39
C41	.01 400V 10%		V84C4S1-10%		PM4S1	4DP-1-103	GEM-1611	4TM-S10
C42	39 10%		DI-39	DD-390	L10Q39	CCD-390	GP439	10TS-Q39
C43	.0033 600V 10%		V84C6D33-10%		PM6D33	6DP-1-332	GEM-16233	6TM-D33
C44	150 10%		DI-150	DD-151	L10T15	CCD-151	GP315	10TS-T15
C45	100 N750 10%		N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C46	.0033 600V 10%		V84C6D33-10%		PM6D33	6DP-1-332	GEM-16233	6TM-D33
C47	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C48	.047 600V 10%		V84C6S47-10%		PM6S47	6DP-3-473	GEM-1615	6TM-S47
C49	.018 400V 10%		V84C4S2-10%		DPMSQ18	4DP-2-203	GEM-1612	4TM-S20
C50	.0022 600V 10%		V84C6D22-10%		PM6D22	6DP-1-222	GEM-16222	6TM-D22
C51	.0068 400V		P488N-0068	D6-682	CUB6D68	6DP-1-682	GEM-6268	6TM-D68
C52	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C53	.027 600V 10%		P684CM-027		DPMS6S27	6DP-3-273		6PS-S27
C54	68 N750 10%		N750-DI 68	DTN-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C55	68 N750 10%		N750-DI 68	DTN-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C56	1200 10%		DI-1200	DD-121	DPMS6D12	CCD-121	GP212	10TS-D12
C57	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C58	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10

PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C59	.056 200V 10%		P684CM-056		DPM56S5	6DP-3-563		6PS-S56
C60	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C61	470 1000V 5%	#105672				VCM-20-47LJ		
C62	.01 400V		P488N-01	DS-103	CUB4S	4DP-1-103	GEM-411	47M-S10
C63	1000		BPD-001	DD-102	BYA10S1	CCD-102	B-310	5SK-D10
C64	330 10%		1489-00033		5RST33	CM-19B-331K	MCB241	MS-S33
C65	1000		BPD-001	DD-103	BYA10S1	CCD-103	B-310	5SK-D10
C66	.047 600V		P688N-047	DD-503	CUB5S47	5DP-3-473	GEM-5147	67M-S47
C67	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	47M-P10
C68	.039 600V 10%		P684CM-039		HVA30Q39	6DP-3-393	GEM-4154	6PS-S39
C69	47 2000V 10%	Note 3			HVA30Q47	VCM-20-470K	2DY-447	
C70	56 2000V 10%	560mmf 1000V*			HVA30Q56	VCM-20-560K	2DY-456	
C71	330 10%		DI-330	DD-331	LU733	CCD-331	GP333	10TS-T33
C72	82 2000V 10%	Note 3			HVA30Q82	VCM-20-820K	2DY-482	
C73	.047 600V		P688N-047	DD-503	CUB5S47	5DP-3-473	GEM-5147	67M-S47
C74	3		NPO-SL3.0	TCZ-3R3	CUV3C	CCTO-3R3	CNO-333	10TCC-V33

Note 1. Not used in some versions.
Note 2. Some versions may use 330mmf ② 2000V (Pt. #02177).
Note 3. Some versions may use 58mmf ② 2000V (Pt. #09568).

RCA Victor Part Number.
* Alternate Value.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS—IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	107334 ①	APL-T2		B13-137Z *	PP16T25	Volume
	200K Tap							
B	Shaft			AK-33		Not Req.	Not Req.	
C	Switch			Not Req.		SK8 *	Not Req.	Push-Pull Off-On
R2	30K	½	109301					Contrast
	20K Tap							
R3	25K	½	107837					Horiz. Hold
R4A	200K	½	107331	AB-46	A47-200K-S	B11-129	U43	Brightness
B	Shaft			AK-33	RS-3/16	SK9	D6-37	
R5A	1.5meg	½	107333	AB-743	A47-1.5meg-S	B11-138	U155	Vert. Hold
B	Shaft			AK-33	RS-3/16	SK9	D6-37	
R6A	2.5meg	½	109307 ②	AB-83	A47-2.5meg-S	B11-139	U235	Tone Note 1
B	Shaft			AK-33	RS-3/16	SK9	D6-37	
R7	1200Ω	2(WW)	109308				PFL-1K	Vert. Linearity
R8	5000Ω	2(WW)	109309				PFL-5K	AGC
R9A	7.5meg		109324					Height
B	1.5meg							Sync Stability
C	100K							Limiter
D	680K							Voltage Divider
R10	5meg	½	109300	TT-87	B47-5meg-S	HLC5	PTA56L	Focus

① Chassis KCS-131Z2, ZE, ZF use Part #107388.
② Chassis KCS-131Z2, ZE, ZF use Part #107708.

* Factory assembled Part #PPQ13-137X(SKS).
Note 1. May not be used in some versions.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No.	REMARKS
R11	4700Ω 5W	PW5-4700	5W-SQ-4700	
R12	10K			
R13	2700Ω			
R14	1000Ω			
R15	56Ω			
R16	1200Ω 1W			
R17	4700Ω			
R18	12Ω			
R19	470Ω			
R20	4700Ω			
R21	330Ω			
R22	8200Ω 7W	PW7-8200	7W-SQ-8200	#106975
R23	56K			
R24	56K			
R25	150K			
R26	68K			
R27	1800Ω			
R28	3900Ω			
R29	18K 2W			
R30	15Ω			
R31	150K			
R32	3300Ω			
R33	680Ω			
R34	1meg			
R35	180K			
R36	180K			
R37	470K 1W			
R38	220K 1W			
R39	560K			
R40	1.2meg			
R41	1.5meg			
R42	180K			
R43	180K			
R44	8.2meg			
R45	820Ω			
R46	15K 4W	PW4-15K	4G-15K	#106635
R47	3900Ω 1W			
R48	100K			
R49	27K 2W			(18K 1W) *
R50	560K			
R51	470K			
R52	33K 2W			
R53	68K			Note 1
R54	2200Ω 4W	PW4-2200	4W-SQ-2200	#103352
R55	220Ω			

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No.	REMARKS
R56	22K			
R57	27K			
R58	6.8meg			
R59	470K			
R60	82K			
R61	39K			
R62	2700Ω			
R63	470K			
R64	2.2meg			
R65	10meg			
R66	1000Ω			
R67	27K			
R68	18K			
R69	560Ω 4W	PW4-560	4W-SQ-560	#109296
R70	27K			
R71	47K			
R72	220K			
R73	680K			
R74	1.8meg			
R75	2.7meg			
R76	68K			
R77	100K			
R78	390K			
R79	390K			
R80	560K			
R81	120K			
R82	2200Ω			
R83	75K			
R84	47K			
R85	33K			
R86	47Ω			
R87	390K			
R88	15K 1W			Note 2
R89	150K			
R90	4700Ω			
R91	560Ω			(150Ω) *
R92	560Ω			(150Ω) *
R93	10Ω (Cold)			#107420
R94	10Ω †	FR-7.5	200-10	#104295
R95	1000Ω			
R96	1.8Ω			
R97	18000Ω 3W	PW3-1800	3G-1800	#107322
R98	4700Ω 2W			
R99	120Ω (@ 25°C)			#107191
R100	2.2meg			

Note 1. Not used in some versions.
Note 2. Some versions may use 6800Ω 3W (Pt. #105862).

† Fusible Type.
#RCA Victor Part Number.

* Alternate Value.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K1	Video IF Decoupling	1000mmf, 1000mmf, 220Ω, 220Ω, 15K, 150K, 150K	107277	Centralab PC-387
K2	3rd Video IF Cathode	4700mmf, 150Ω	109320	
K3	Sound IF Grid	56mmf, 47K	104329	Centralab RC-421
K4	Sound IF Cathode	10000mmf, 82Ω	107276	
K5	Audio Detector Cathode	10000mmf, 560Ω	109319	
K6	Vert. Integrator	2400mmf, 90K	109326	Centralab PC-407
K7	Vert. Feedback	2400mmf, 68K	109325	Centralab PC-406

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: RCA Victor PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L1A	47.25MC Trap	109322					① Late production chassis use Pt. #109782.
B	39.25MC Trap						② Wound on 4700Ω Res.
L2A	1st Video IF	109323					* Parallel with 4700Ω Resistor
B	41.25MC Trap						
L3	2nd Video IF	109071					
L4	3rd Video IF	109158					
L5	4th Video IF	109321					
L6	Peaking (36uh)	101819	TV-180	6176	RTC-8593	T301	
L7	Peaking (250uh)	101287	TV-185	6181	RTC-8598	T315	
L8	RF Choke (5.6uh)	109171	BC-565	4609	RTC-8519	T359	
L9	4.5MC Trap	104963					
L10	Peaking (750uh)	107199 ①	TV-207	6156	RTC-8588	T328	
L11	Peaking (250uh)	109298 ②	TV-185 *	6181 *	RTC-8598 *	T315 *	
L12	1st Sound IF	104136					
L13	2nd Sound IF	107201					
L14	Quadrature	106795					
L15	RF Choke (8.2uh)	107385	BC-566	4611	RTC-8521	T960	
L16	RF Choke (8.2uh)	107385	BC-566	4611	RTC-8521	T960	
L17	Fil. Choke (1uh)	73477	BC-561	4603	RTC-8515	T355	
L18	Fil. Choke (1uh)	73477	BC-561	4603	RTC-8515	T355	

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: RCA Victor PART No.	Merit PART No.	Miller PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	Workman TV PART No.
L19A	Horiz. Osc.	109318							
B	Horiz. Stabilizer								
L20	Width Coil	107337							T130

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	DC RES.	INDUCTANCE @ CURRENT (1000 ^C.)	REPLACEMENT DATA: RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L21	.280A	45Ω	.7 Hy.	100286	C-2996	C-2343	26C44	C-27X	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA: RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
	PRI	SEC. 1	SEC. 2						
T1	117V	560VCT @ 280A DC	5V @ 3A	109297		P-8355 ①		R-122A ①	① Drill new mounting hole(s).
	SEC. 3	SEC. 4	SEC. 5						
	6.3V @ 9A								

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: RCA Victor PART No.	Merit PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	Vert. Output	107338	A-2854	VO-34 ①	VO-100 ②	26S73	A-144X	
	Alt. Vert. Output	109303						
T3	Yoke (Horiz. 18MH) (90°) (Vert. 36MH)	107408	MDF-99 ③	PCM-2045 ③④	DY-23A ③	Y-25 ③	Y-43 & NW4	
	Rear Cover and Centering Device							
T4	Horiz. Output	107421	HVO-118		HO-289	FLY-150	D-200	

① Connect as autoformer.
② Cut and tape blanking lead.
③ Requires new rear cover, centering device, and yoke clamping device.
④ Connect horiz. damping capacitor across yoke Terminals #3 and #7. Connect yoke Terminal #3 to yoke plug pin #4; yoke #2 and #7 to plug #5; yoke #1 to plug #8.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI.	IMPEDANCE: SEC.	REPLACEMENT DATA: RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T5	8700Ω	3-4Ω	100037 ①	A-3020	A-3823	26S48	S-18X	① Chassis KCS131Z2, ZE, ZF use Part #109304.

SPEAKER

ITEM No.	TYPE: SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA: RCA Victor PART No.	QUAM PART No.	NOTES
SP1	4" x 6"	PM	3-4Ω	107475 *	46A1	* Used in Models 21B325, 5, 7, U, & 8U
	4"	PM	3-4Ω	79695B #	4A05	# Used in Models 21B312, U, & 8U
	8"	PM	3-4Ω	107475 *	8A21	+ Used in Models 21D505, 6, 7, U, & 8U

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: RCA Victor PART No. FUSE	RCA Victor PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M2	2½"	length #28 wire						
M2	2½"	length #28 wire						

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: RCA Victor PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M3		109328 *	6GC1 *			* Dual Selenium, Common Cathode Type
M4	1N64	76675B +		1N64 +	1N64 +	+ Crystal Diode, Video Det., Pigtail

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M5	Tuner (KRK87M)	[illegible]	STANDARD COIL REPLACEMENT #GG-4220A, VHF, Models 21B325U, 6U
	Tuner (KRK98A)	109339 ①	VHF, Model 21B312
	Tuner (KRK87R)		VHF, Model 21B312SU
	Tuner (KRK98D)	109332 ②	VHF, Models 21B325, 6, & 7
	Tuner (KRK98B)	109330 ③	VHF, Models 21D405, 5, 7, & 9, 21D40C4, 21D485, 6, & 7, 21D505, 6, & 7
	Tuner (KRK87P)	109622	VHF, Models 21D505U, 6U, 7U, 21D406U
	Tuner (KRK97D)	109339 ④	VHF with UHF Provisions, Models 21B325U, 6U, & 7U
	Tuner (KRK97B)	109338 ⑤	VHF with UHF Provisions, Models 21D405U, 6U, & 7U
	Tuner (KRK97A)	109337 ⑥	VHF with UHF Provisions, Model 21B312U
	Tuner (KRK86AC)	982047	UHF

① Replacement Tuner KRK70E (#107744).
② Replacement Tuner KRK70H (#109038).
③ Replacement Tuner KRK70F (#107998).
④ Replacement Tuner KRK7LJ (#109040).
⑤ Replacement Tuner KRK7HS (#109002).
⑥ Replacement Tuner KRK7HF (#10900).

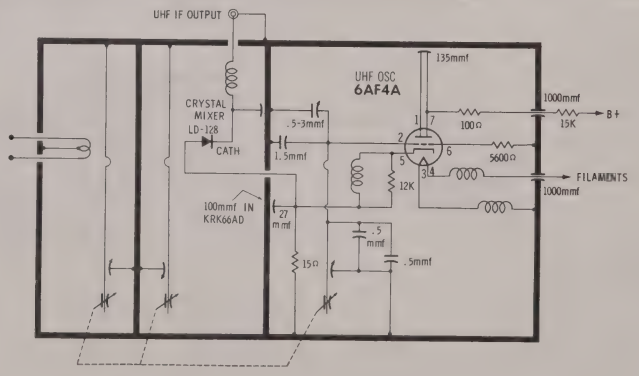
WIRING DATA

High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

DESCRIPTION	PART NO.	MODEL NO.	21LB312	21LB312U	21LB312SU	21LB325	21LB325U	21LB325SU	21LB326	21LB326U	21LB326SU	21LB327	21LB327U	21LD405	21LD406	21LD406U	21LD406SU	21LD407	21LD409	21LD485	21LD486	21LD487	21LD505	21LD505U	21LD505SU	21LD506	21LD506U	21LD506SU	21LD507	21LD507TU	21LD507SU	21LD40C4
Safety Glass	104079		X	X	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X	X	X	X	X	
Mask	109395		X	X	X																											
Mask	109190					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob-VHF Channel Selector	109398		X	X																												
Knob- "	109399				X																											
Knob- "	109192					X	X		X	X		X	X	X	X	X		X	X	X	X	X	X	X		X	X		X	X		X
Knob- "	109193							X			X						X								X			X			X	
Knob-UHF Channel Selector	107269			X			X			X			X			X								X			X			X	
Knob-UHF Channel Indicator	107266			X			X			X			X			X								X			X			X	
Knob-Fine Tuning	107263		X	X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob- "	106596					X	X	X	X	X	X	X	X	X																		
Knob-Volume, Contrast Brightness, Vert. Hold,	107264		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob- Horiz. Hold, Tone	107265		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cabinet	Z4751		X	X	X																											
Cabinet	Z4742					X	X	X																								
Cabinet	Z4743								X	X																						
Cabinet	Z4744											X	X																			
Cabinet	X4785													X																		
Cabinet	X4786														X	X	X															
Cabinet	X4787																	X														
Cabinet	X4788																		X													
Cabinet	X4718																															X
Cabinet	X4793																			X												
Cabinet	X4794																				X											
Cabinet	X4795																					X										
Cabinet	M4773																						X	X	X							
Cabinet	M4774																									X	X	X				
Cabinet	M4776																												X	X	X	
Leg- Cabinet	X5191																		X													
Leg- "	X5188													X																		
Leg- "	X5192																						X	X	X							
Leg- "	X5124																						X	X	X							
Leg- "	X5190																	X														
Leg- "	X5194																												X	X	X	
Leg- "	X5126																												X	X	X	
Leg- "	X5189														X	X	X															
Leg- "	X5193																									X	X	X				
Leg- "	X5125																									X	X	X				



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UHF TUNER KRK66AC (962047)

TUNER ALIGNMENT INSTRUCTIONS (cont)
KRK87

UHF OSCILLATOR ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point Ⓣ. Positive to chassis.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Across UHF antenna terminals.	Fundamental Osc. Freq. (See Chart #1)	Channel to be received	Across Video Det. load with 10K in high side.	UHF Osc. slug	Adjust for zero beat on scope.

UHF ANTENNA, MIXER AND HARMONIC OSCILLATOR ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point Ⓣ. Positive to chassis.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Across UHF antenna terminals.	To Center Freq. of channel to be received. (10MC Swp.) (See chart #2)		Channel to be received	Across Video Det. load thru 10K.	A228, A229, A230	Adjust for maximum gain and symmetry of response.

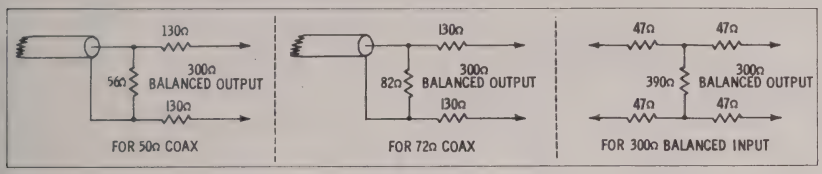


FIG. 201

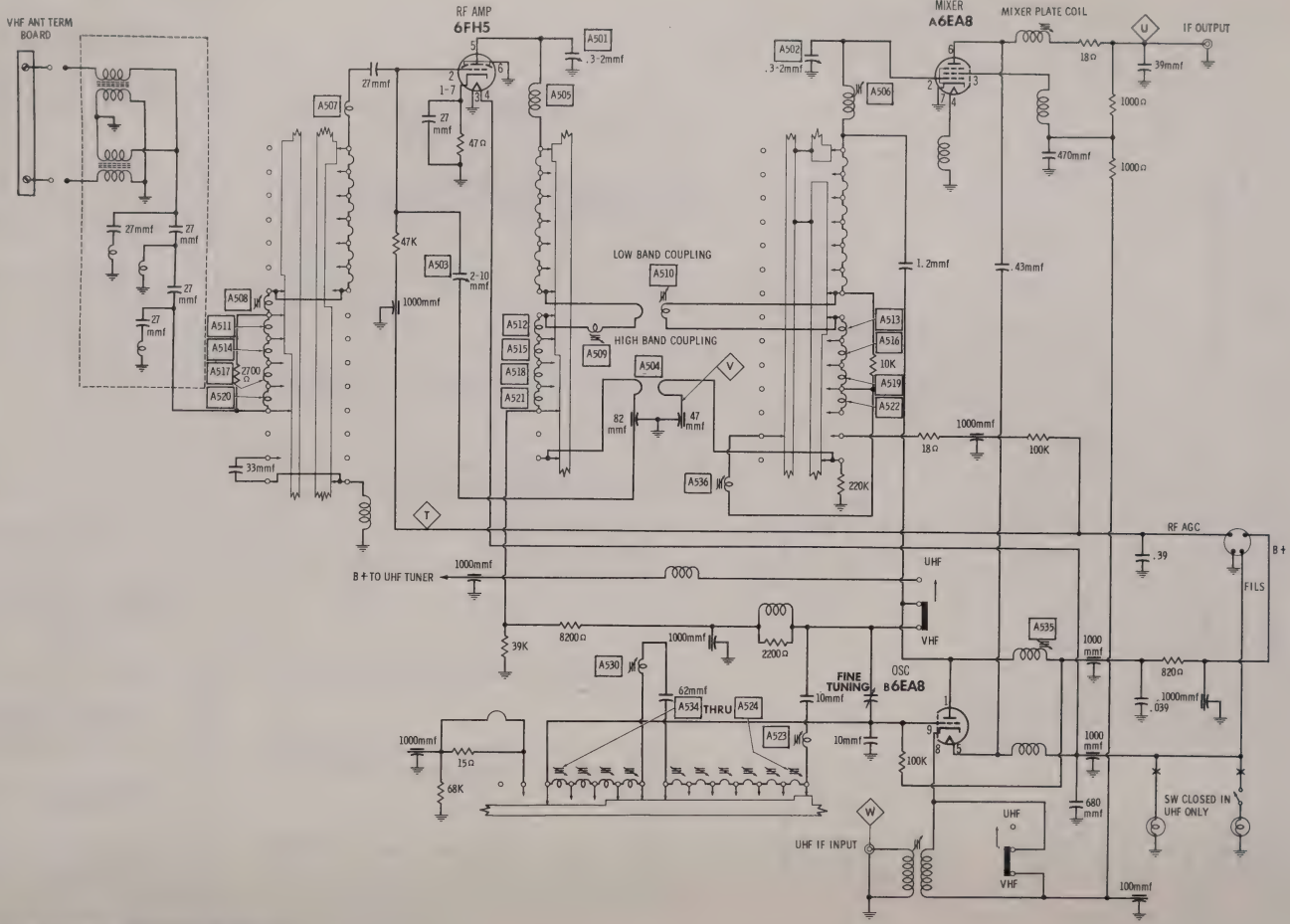
FIG. 202

CHART #1

CHANNEL NUMBER	FUNDAMENTAL OSC. FREQ. (MC)	HARMONIC OSC. FREQ. (MC)	CHANNEL NUMBER	FUNDAMENTAL OSC. FREQ. (MC)	HARMONIC OSC. FREQ. (MC)	CHANNEL NUMBER	FUNDAMENTAL OSC. FREQ. (MC)	HARMONIC OSC. FREQ. (MC)
14	258.5	517	38	220.33	661	62	268.33	805
15	261.5	523	39	222.33	667	63	270.33	811
16	264.5	529	40	224.33	673	64	272.33	817
17	267.5	535	41	226.33	679	65	274.33	823
18	270.5	541	42	228.33	685	66	276.33	829
19	182.33	547	43	172.75	691	67	278.33	835
20	184.33	553	44	232.33	697	68	280.33	841
21	186.33	559	45	234.33	703	69	282.33	847
22	188.33	565	46	236.33	709	70	213.25	853
23	190.33	571	47	238.33	715	71	214.75	859
24	192.33	577	48	240.33	721	72	216.25	865
25	194.33	583	49	242.33	727	73	217.75	871
26	196.33	589	50	244.33	733	74	219.25	877
27	198.33	595	51	246.33	739	75	220.75	883
28	200.33	601	52	248.33	745	76	222.25	889
29	202.33	607	53	250.33	751	77	223.75	895
30	204.33	613	54	252.33	757	78	225.25	901
31	206.33	619	55	254.33	763	79	226.75	907
32	208.33	625	56	256.33	769	80	228.25	913
33	210.33	631	57	258.33	775	81	229.75	919
34	212.33	637	58	260.33	781	82	231.25	925
35	214.33	643	59	262.33	787	83	232.75	931
36	216.33	649	60	264.33	793			
37	218.33	655	61	266.33	799			

CHART #2

Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier
2	54-60	55.25	59.75	23	524-530	525.25	529.75	44	650-656	651.25	655.75	64	770-776	771.25	775.75
3	60-66	61.25	65.75	24	530-536	531.25	535.75	45	656-662	657.25	661.75	65	776-782	777.25	781.75
4	66-72	67.25	71.75	25	536-542	537.25	541.75	46	662-668	663.25	667.75	66	782-788	783.25	787.75
5	76-82	77.25	81.75	26	542-548	543.25	547.75	47	668-674	669.25	673.75	67	788-794	789.25	793.75
6	82-88	83.25	87.75	27	548-554	549.25	553.75	48	674-680	675.25	679.75	68	794-800	795.25	799.75
7	174-180	175.25	179.75	28	554-560	555.25	559.75	49	680-686	681.25	685.75	69	800-806	801.25	805.75
8	180-186	181.25	185.75	29	560-566	561.25	565.75	50	686-692	687.25	691.75	70	806-812	807.25	811.75
9	186-192	187.25	191.75	30	566-572	567.25	571.75	51	692-698	693.25	697.75	71	812-818	813.25	817.75
10	192-198	193.25	197.75	31	572-578	573.25	577.75	52	698-704	699.25	703.75	72	818-824	819.25	823.75
11	198-204	199.25	203.75	32	578-584	579.25	583.75	53	704-710	705.25	709.75	73	824-830	825.25	829.75
12	204-210	205.25	209.75	33	584-590	585.25	598.75	54	710-716	711.25	715.75	74	830-836	831.25	835.75
13	210-216	211.25	215.75	34	590-596	591.25	595.75	55	716-722	717.25	721.75	75	836-842	837.25	841.75
14	470-476	471.25	475.75	35	596-602	597.25	601.75	56	722-728	723.25	727.75	76	842-848	843.25	847.75
15	476-482	477.25	481.75	36	602-608	603.25	607.75	57	728-734	729.25	733.75	77	848-854	849.25	853.75
16	482-488	483.25	487.75	37	608-614	609.25	613.75	58	734-740	735.25	739.75	78	854-860	855.25	859.75
17	488-494	489.25	493.75	38	614-620	615.25	619.75	59	740-746	741.25	745.75	79	860-866	861.25	865.75
18	494-500	495.25	499.75	39	620-626	621.25	625.75	60	746-752	747.25	751.75	80	866-872	867.25	871.75
19	500-506	501.25	505.75	40	626-632	627.25	631.75	61	752-758	753.25	757.75	81	872-878	873.25	877.75
20	506-512	507.25	511.75	41	632-638	633.25	637.75	62	758-764	759.25	763.75	82	878-884	879.25	883.75
21	512-518	513.25	517.75	42	638-644	639.25	643.75	63	764-770	765.25	769.75	83	884-890	885.25	889.75
22	518-524	519.25	523.75	43	644-650	645.25	649.75								



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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VHF TUNER with UHF Provisions KRK97A, B, D

UHF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.
Connect the negative lead of a 2.5 volt bias supply to point (T). Positive to chassis.
Connect a 180Ω resistor across input cable of scope.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
24.	High side thru input lead (Fig. 503) to point (W). Low side to chassis.	45MC (10MC Swp.)	41.25MC 45.75MC	UHF Any	Vert. Amp. thru 330mmf to plate of Mixer. Low side to chassis.	A535, A536	Adjust for maximum gain and symmetry of response similar to Fig. 504 with markers as shown.
25.	Across UHF Antenna Terminals.	To center frequency of channel to be received. (See Chart #2	"	Channel to be received	Scope across Video Det. Load	A535, A536	Retouch for response similar to Fig. 505.

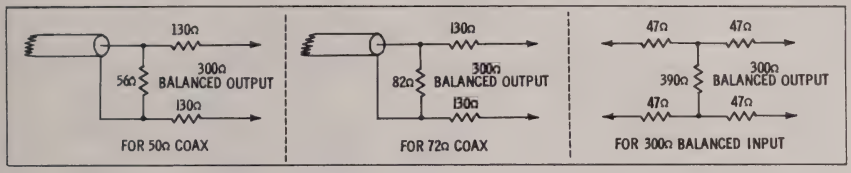


FIG.501

FIG.502

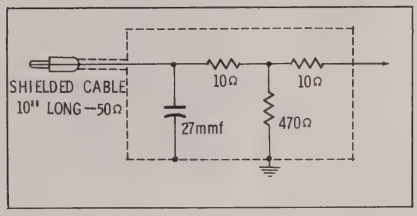


FIG.503

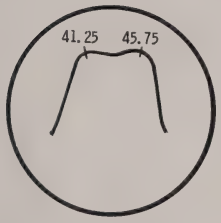


FIG.504

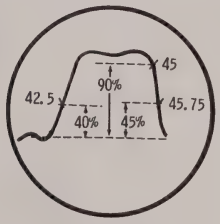
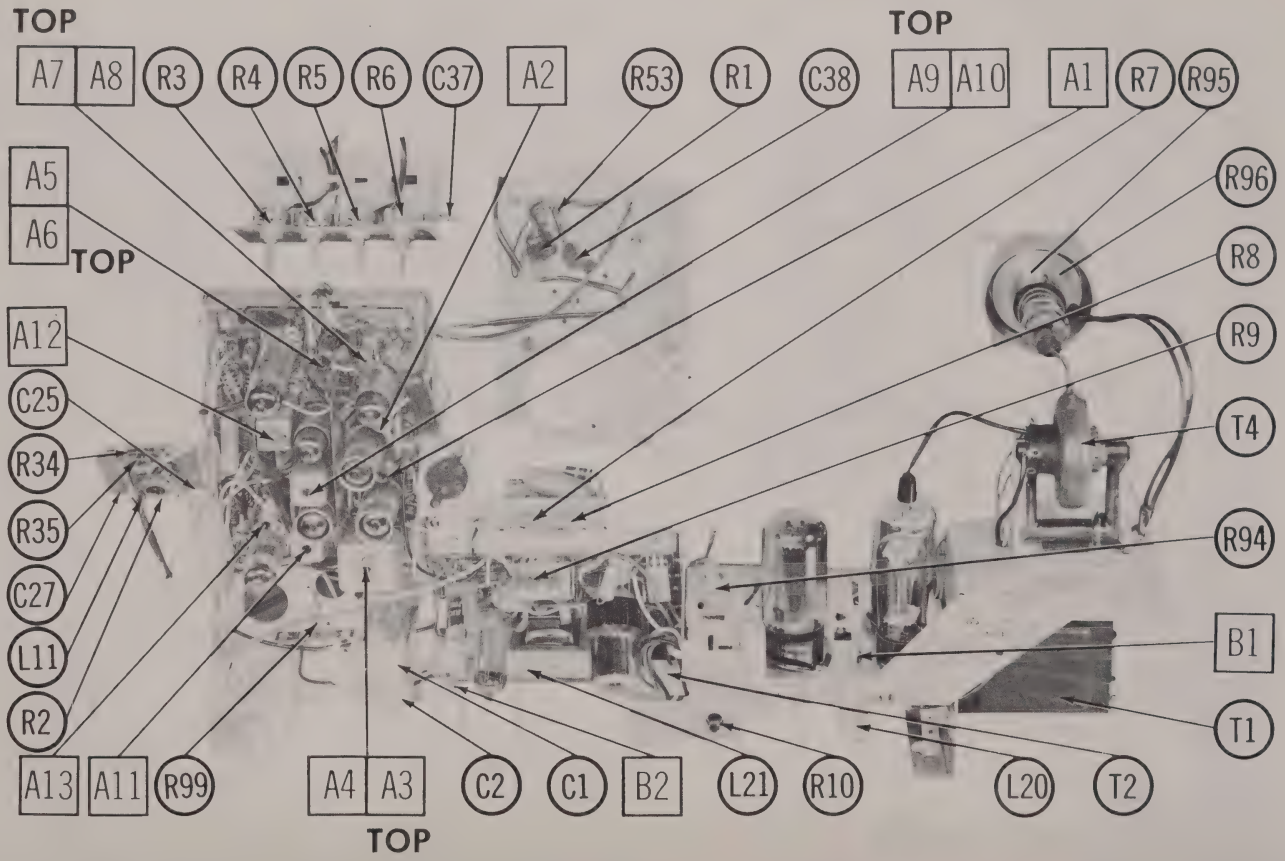


FIG.505



CHASSIS - TOP VIEW

ALIGNMENT INSTRUCTIONS (cont)

SOUND IF ALIGNMENT

Connect the negative lead of a 10 volt bias supply to point Ⓐ. Positive to chassis.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
12.	High side thru .001mfd to TP-2. Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe thru diode detector (Fig. 6) to pin 7 (grid 3) of Audio Detector. Common to chassis.	A9, A10, A11	Adjust for maximum negative DC on meter. Attenuate generator for reading between 1 and 1.5 volts on VTVM when finally peaked. Peak A9 and A10 with maximum core separation. Adjust A11 for maximum deflection.
13.	Remove the VTVM and Diode Detector. Connect scope across speaker voice coil. Turn off signal generator and tune in the strongest signal in the area, adjusting volume control for normal volume. Preset Coil Slug (A12) flush with top of coil form. While observing scope and listening to sound, adjust for maximum on this second peak.					

4.5MC TRAP ALIGNMENT

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	High side thru .001mfd to TP-2. Low side to chassis.	4.5MC (400∿ Mod.)	Any non-interfering channel	Vert. Amp. thru diode detector to pin 11 (cathode) of picture tube. Common to chassis.	A13	Adjust for MINIMUM deflection.

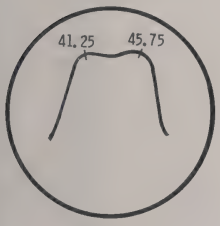


FIG. 1

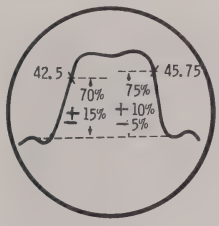


FIG. 2

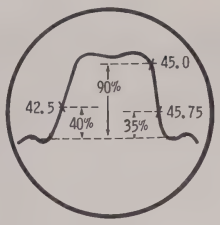


FIG. 3

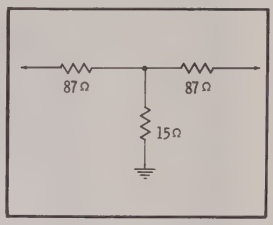


FIG. 4

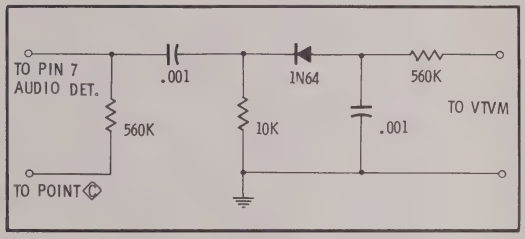


FIG. 6

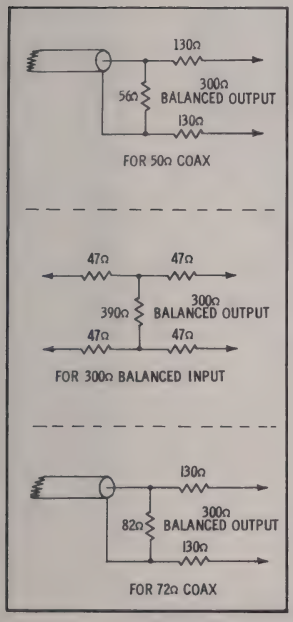
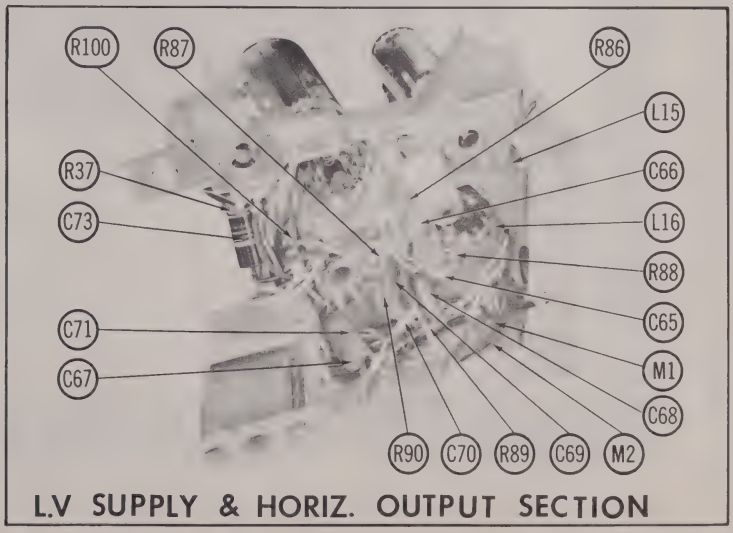
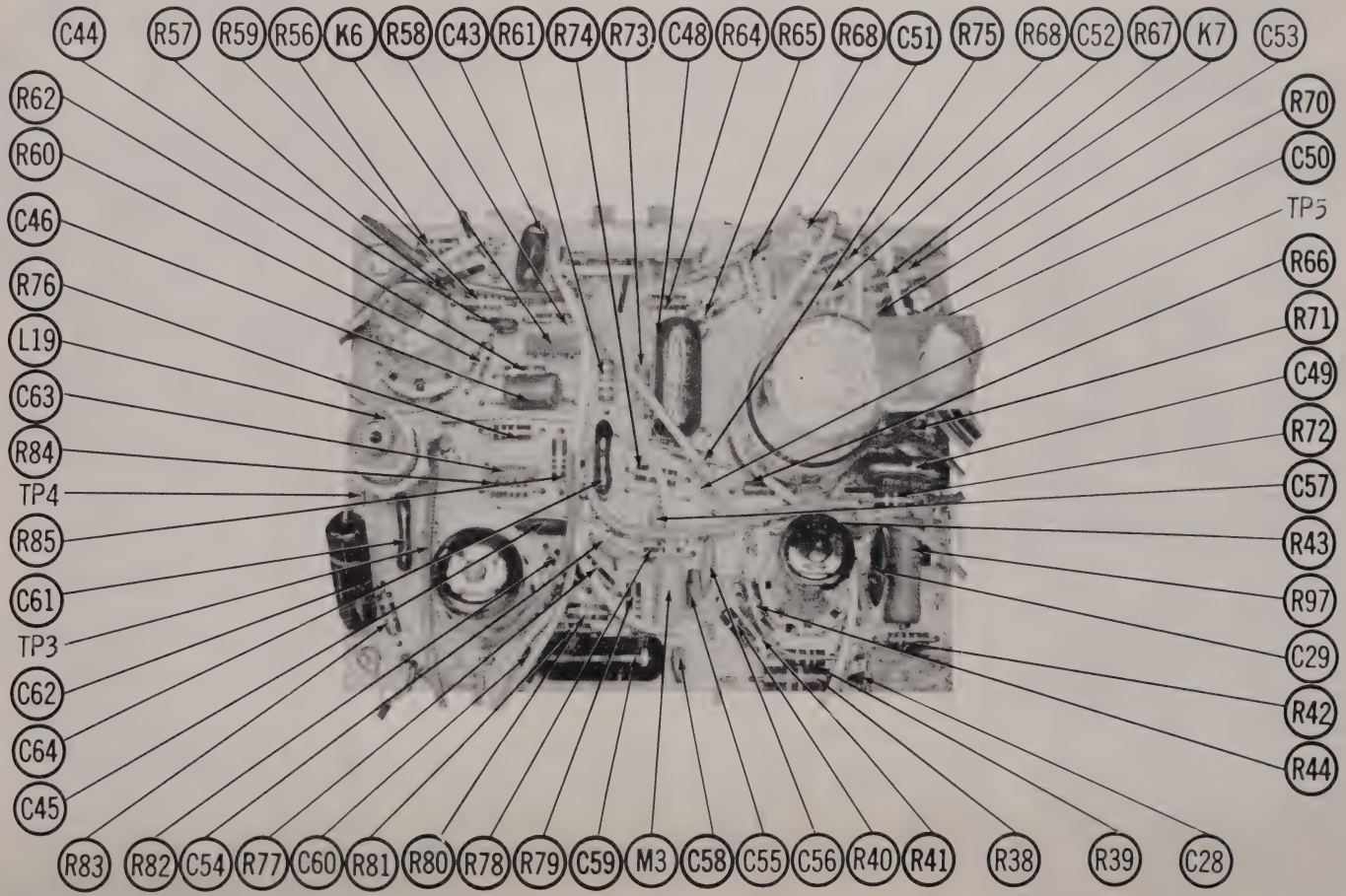


FIG. 5

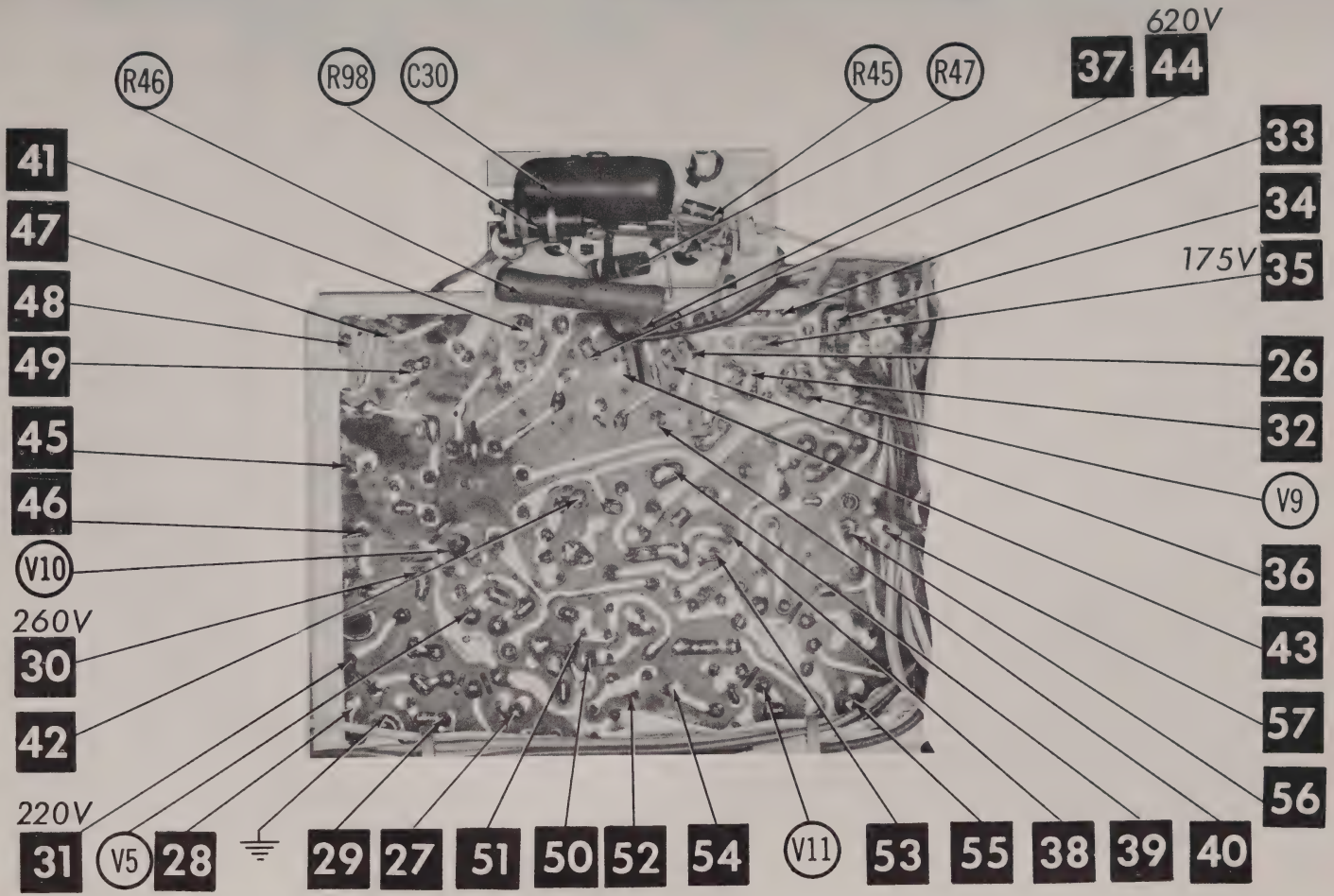


L.V SUPPLY & HORIZ. OUTPUT SECTION

TP3 .15V HORIZ OSC CATH TP4 .05V HORIZ STAB COIL TP5 -42V SYNC BIAS



SWEEP, AGC, SYNC PRINTED BOARD



A Howard W. Sams CIRCUITRACE® Photo

SWEEP, AGC, SYNC PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

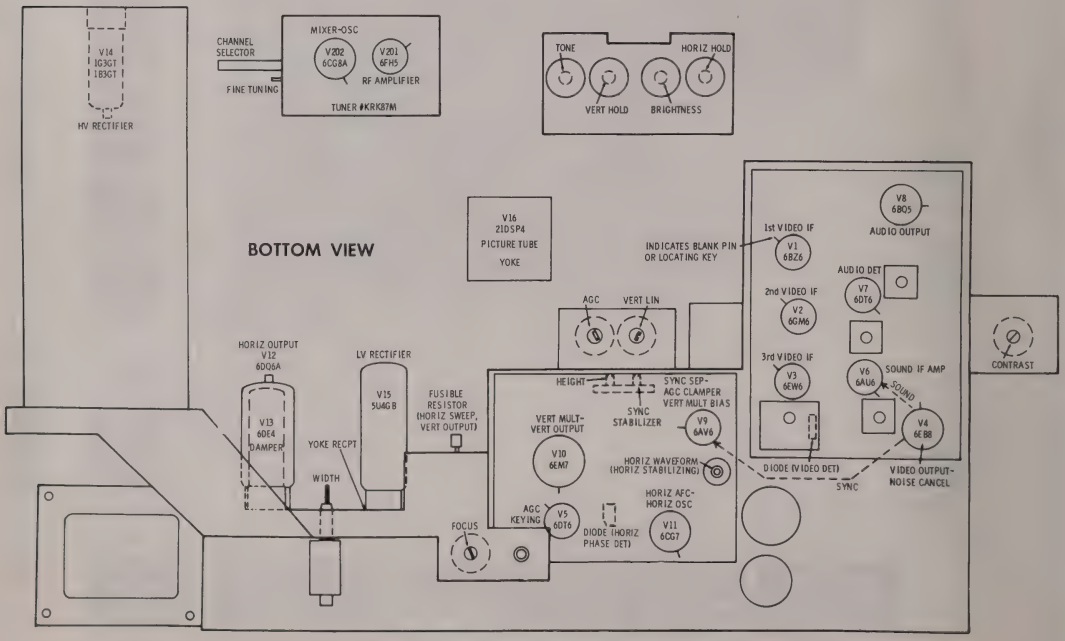
RCA VICTOR CHASSIS KCS131C,
D, E, T, U, W, ZD, ZE, ZF

FOLDER 2

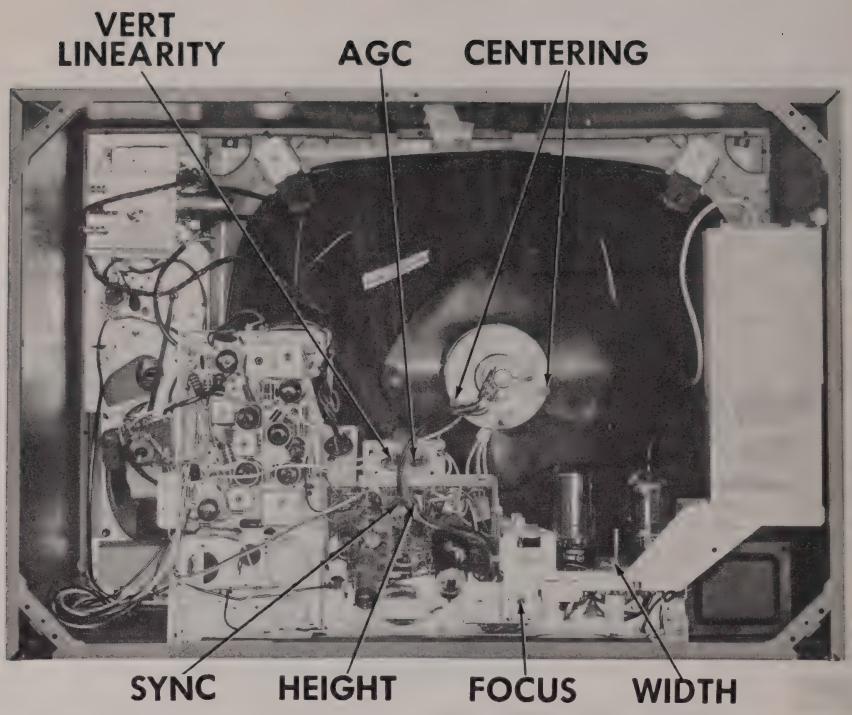
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	1.6meg	1250Ω	0Ω	.1Ω	▪ 232Ω	▪ 232Ω	1200Ω		
V2	6GM6	80K	90K	0Ω	.1Ω	† 265Ω	† 265Ω	90K		
V3	6EW6	.1Ω	150Ω	.1Ω	0Ω	† 7100Ω	† 7100Ω	150Ω		
V4	6EB8	680Ω	• 1meg	† 25K	.1Ω	0Ω	15Ω	4400Ω	† 18K	† 7000Ω
V5	6DT6	55K	• 7000Ω	.1Ω	0Ω	1.6meg	† 1800Ω	157K		
V6	6AU6	47K	0Ω	.1Ω	0Ω	† 27K	† 27K	82Ω		
V7	6DT6	5Ω	560Ω	0Ω	.1Ω	† 560K	† 33K	470K		
V8	6BQ5	NC	• 1000Ω	220Ω	0Ω	.1Ω	NC	† 2600Ω	NC	† 2200Ω
V9	6AV6	7.3meg	0Ω	0Ω	.1Ω	INF	2.4meg	† 40K		
V10	6EM7	2.7meg	† 325Ω	• 1000Ω	• 1.2meg	• † 6.3meg	INF	0Ω	.1Ω	
V11	6CG7	† 45Ω	1.5meg	2200Ω	0Ω	.1Ω	† 80K	• 90K	67Ω	0Ω
V12	6DQ6A	TP	0Ω	NC	† 15K	1.8meg	NC	.1Ω	0Ω	TOP CAP † 17Ω
V13	6DE4	NC	NC	5meg	NC	† 45Ω	NC	.1Ω	0Ω	
V14	1G3GT 1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP † 500Ω
V15	5U4GB	NC	¶ 15K	NC	30Ω	NC	33Ω	NC	¶ 15K	
V16	21DSP4	0Ω	• 1000Ω	• † 3meg	† 220K	• 200K	.1Ω			
V201	6FH5	47Ω	2.4meg	0Ω	.1Ω	† 5700Ω	0Ω	47Ω		
V202	6CG8A	4700Ω	† 9500Ω	0Ω	0Ω	.1Ω	† 5700Ω	† 4700Ω	0Ω	220K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM PIN 2 OF V15. ▪ MEASURED FROM PIN 2 OF V2.
‡ MEASURED FROM PIN 3 OF V13. NC NO CONNECTION TP TIE POINT



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Suggested Alignment Tools:
GENERAL CEMENT #8282, 8606, 8606L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

CHECK OF THE HORIZONTAL OSCILLATOR ADJUSTMENT

Turn the Horizontal Hold fully clockwise. The picture should fall out of sync with approximately eight diagonal bars slanting down to the left. Turn the Hold counterclockwise slowly. The number of bars will gradually reduce and when only one and a half to three bars are obtained, the picture will pull into sync with only a slight additional counterclockwise turn of the Hold. Continue turning the Horizontal Hold counterclockwise until the picture falls out of sync. Rotation beyond fallout position should produce between 2 and 12 bars before interrupted oscillation (motorboat occurs). Interrupted oscillation should be reached before full counterclockwise rotation.

If the receiver passes this check and the picture is normal and stable, the Horizontal Oscillator is properly adjusted. Skip "Adjustment of the Horizontal Oscillator".

ADJUSTMENT OF HORIZONTAL OSCILLATOR

If in the above check the receiver failed to hold sync over two thirds turn of counterclockwise rotation of the Horizontal Hold from pull-in point, it will be necessary to make the following adjustments.

The Width Slug (B1) should be properly adjusted before attempting to adjust the Horizontal Stabilizing Coil.

Connect a short jumper across the terminals of the Horizontal Waveform Coil (Stabilizing, L19B) and short the grid (pin 2) of the 6CG7 (V11) to chassis with a small screwdriver. Adjust the Horizontal Hold Control for an upright picture (may appear to float back and forth across the screen). Remove the jumper from across L19B and adjust B2 to again obtain a picture in an upright position. When B2 is properly adjusted, alternately shorting and removing short should not cause the picture to lose sync but instead cause a slight sideways shift of the picture. Remove the short from the grid of the 6CG7.

WIDTH ADJUSTMENT

Turn the set on and tune in a TV station, preferably with a test pattern. Adjust the Width Slug (B1) to fill the picture mask with a line voltage of 105 volts. With normal line voltage of 117 volts, adjust B1 for an overscan of approximately $\frac{1}{2}$ inch on each side of the screen. This adjustment should be made with the Brightness Control set at normal level.

DISASSEMBLY INSTRUCTIONS

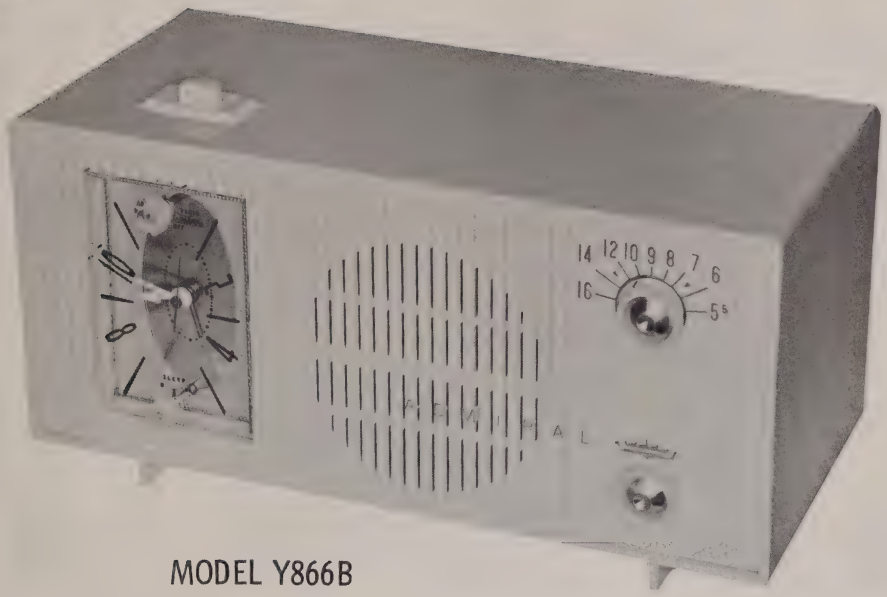
CHASSIS REMOVAL MODEL 211B326SU

1. Remove 1 screw and 6 clamps holding rear cover.
2. Remove rear cover.
3. Remove 8 push-on type knobs at front.
4. Remove picture tube socket, yoke plug, high voltage lead, and speaker leads.
5. Remove 2 screws holding control panel.
6. Remove 4 nuts holding tuner mounting assembly.
7. Remove 5 chassis bolts and one screw holding high voltage cage to cabinet.
8. Remove chassis.

PHOTOFACT® Folder with CIRCUITRACE®

ADMIRAL MODELS Y853C, Y865B, Y866B (Ch. 5B5B, 5B5C)

ADMIRAL MODELS Y853C, Y865B, Y866B (Ch. 5B5B, 5B5C)



MODEL Y866B

ADMIRAL MODELS Y853C, Y865B, Y866B (Ch. 5B5B, 5B5C)

TRADE NAME	Admiral Models Y853C (Ch. 5B5C), Y865B, Y866B (Ch. 5B5B)
MANUFACTURER	Admiral Sales Corp., Service Div., 903 Morrissey Drive, P. O. Box 845, Bloomington, Illinois
TYPE SET	AC Operated 5 Tube AM Receiver With Electric Clock (Model Y853C Does Not Include "Snooze Alarm" and "Sleep Switch")
POWER SUPPLY	110 — 120 Volts AC, 60 Cycles RATING 24 Watts, .23 Amp. @ 117 Volts AC (Less Clock)
TUNING RANGE—BROADCAST	535 — 1620KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 thru A4..... GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A6..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to antenna stator lug of tuning gang. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	1620KC	"	"	A5	"
3.	Loop	1400KC	1400KC	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

SET 527 FOLDER 3

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

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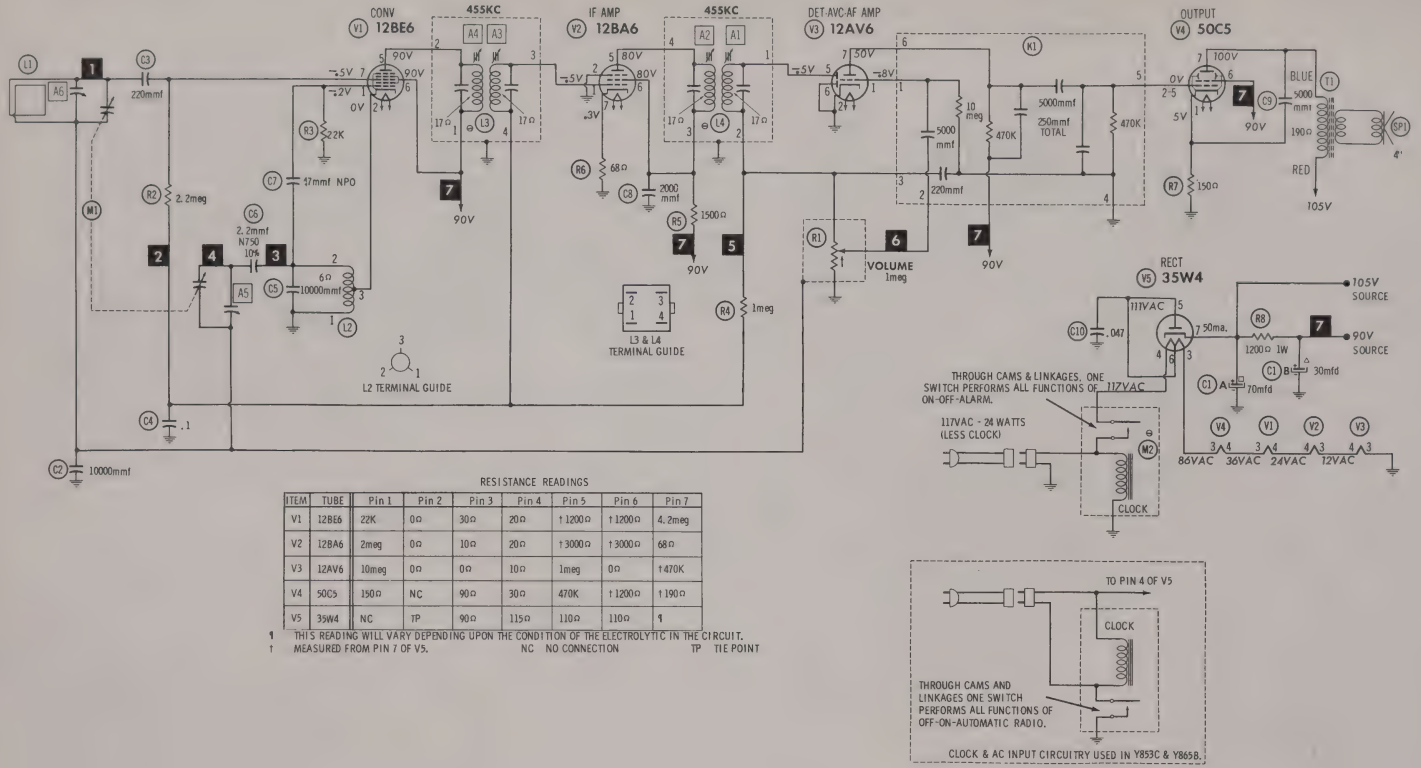

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	0Ω	30Ω	20Ω	†1200Ω	†1200Ω	4.2meg
V2	12BA6	2meg	0Ω	10Ω	20Ω	†3000Ω	†3000Ω	68Ω
V3	12AV6	10meg	0Ω	0Ω	10Ω	1meg	0Ω	†470K
V4	50C5	150Ω	NC	90Ω	30Ω	470K	†1200Ω	†190Ω
V5	35W4	NC	TP	90Ω	115Ω	110Ω	110Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5. NC NO CONNECTION TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

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ADMIRAL MODELS Y853C, Y865B, Y866B (Ch. 5B5B, 5B5C)

PARTS LIST AND DESCRIPTIONS

TUBES

◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Converter	12BE6	V4	Output	50C5
V2	IF Amplifier	12BA6	V5	Rectifier	35W4
V3	Det. -AVC-AF Amp.	12AV6			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	ADMIRAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■70	150	67C30-2	PWH2-17-50	BBRD8415	PFP214.3	TDLD-10	PCL-2441	
B	▲30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C3	220		DI-220	DD-221	L10T22	CCD-221	B-322	10TS-T22
C4	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C5	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C6	2.2 N750 10%	Pt. #65D6-159					CN7-522	10TCU-V22
C7	47 NPO		NPO-DI 47	DTZ-47	C10Q47C	CCTO-470	CNO-447	10TCC-Q47
C8	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C9	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C10	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ADMIRAL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	1meg	½	75D25-15				P2-16A	Volume

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	2.2meg				R6	68Ω			
R3	22K				R7	150Ω			
R4	1meg				R8	1200Ω 1W			
R5	1500Ω								

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ADMIRAL PART No.	REPLACEMENT DATA	
K1	Audio Coupling	220mmf, 250mmf, 5000mmf, 5000mmf, 470K, 470K, 10meg	63C6-20	Aerovox Centralab Cornell-Dubilier Mallory Sprague	PA-306 PC-159 DT-6

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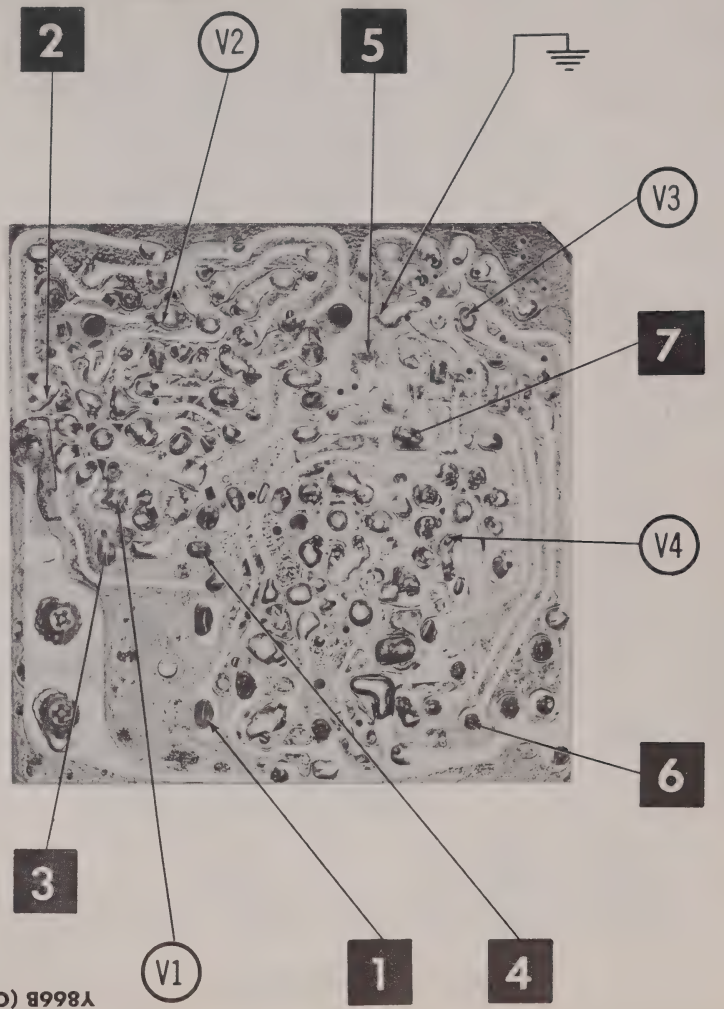
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		ADMIRAL PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	69B228-4	BC-419	705-A		① Alternate Part #72C170-2.
L2	Osc.	69A217-1				
L3	Input IF	72C170-4 ①	BC-356	13-PC1	RTC-8641	
L4	Output IF	72C170-5 ①	BC-357	13-PC2	RTC-8642	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	ADMIRAL PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2100Ω	3-4Ω	(Part of SP1)	A-3025	A-3332	24S53	S-12X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ADMIRAL PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	78B94-2 *	4A07	* Includes T1

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M1	Tuning Cap.	68C78-1	2 Gang
M2	Clock Ass'y.	91C38-1	Model Y853C
	Clock Ass'y.	91C39-1	Model Y866B, Y865B

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

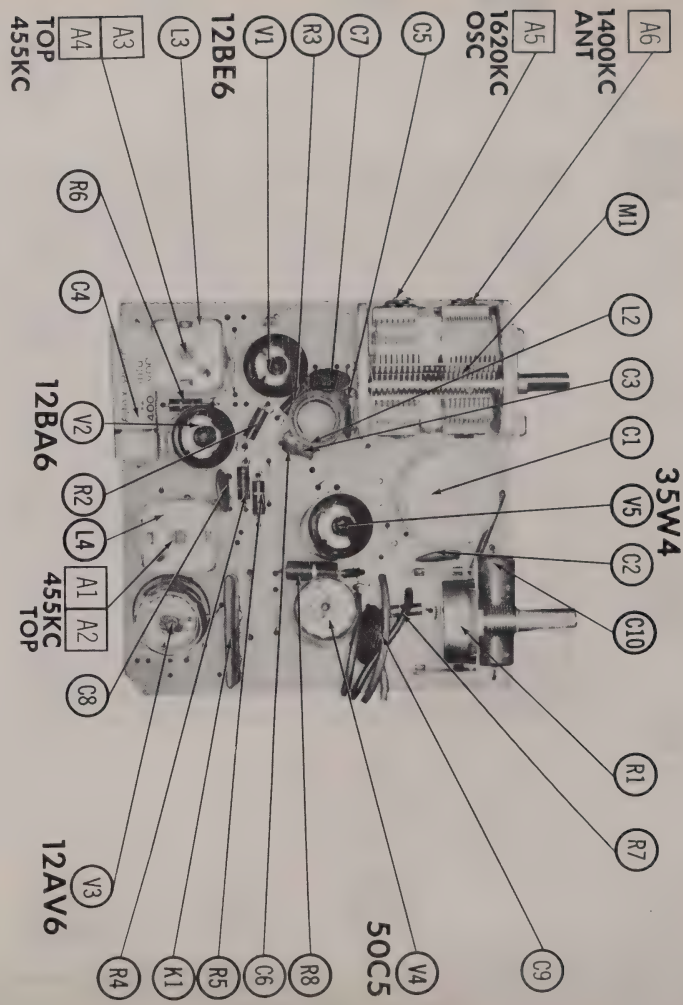
NAME	PART NO.	DESCRIPTION
Knob	33C353-4	Tuning
Knob	33C353-5	Volume
Knob	91C38-10	Clock, Model Y853C
Knob	91C39-10	Clock, Models Y865B, Y866B
Pushbutton	33B362-1	"Snooze Alarm", Models Y865B, Y866B
Cabinet Front	34D151-1	White
Cabinet Rear	34D129-29	White, Model Y853C
Cabinet Rear	34D129-31	Melon, Model Y865B
Cabinet Rear	34D129-32	Yellow, Model Y866B
Crystal	24C32-1	Clock, Model Y853C
	24C32-2	Clock, Models Y865B, Y866B

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord (Interlock Type) ..... Use BELDEN No. 8874

CHASSIS—TOP VIEW



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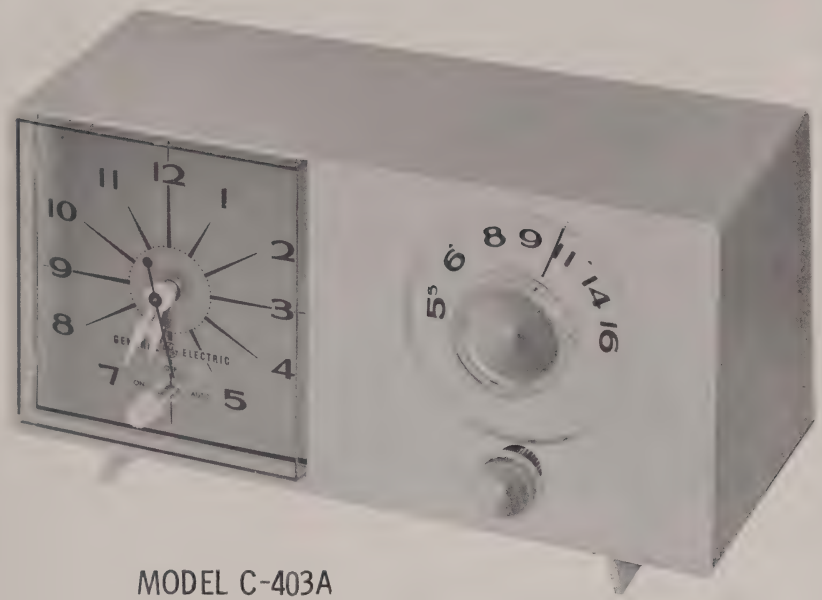
GENERAL ELECTRIC MODELS C-403A, T-100A

GENERAL ELECTRIC MODELS
C-403A, T-100A



MODEL C-403A

GENERAL ELECTRIC MODELS
C-403A, T-100A

TRADE NAME	General Electric Model C-403A, T-100A
MANUFACTURER	General Electric Co., Product Service, Radio Receiver Dept., 869 Broad Street, Utica, N. Y.
TYPE SET	AC Operated 5 Tube AM Receiver With Electric Clock (Model T-100A Does Not Include Clock)
POWER SUPPLY	105 – 120 Volts AC, 60 Cycles RATING 28 Watts, .27 Amp. @117 Volts AC (Less Clock)
TUNING RANGE—BROADCAST	540 – 1600KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 thru A4.... GENERAL CEMENT #8282, 8606, 8606-L, 9091
WALSCO #2526, 2541, 2542, 2543, 2544
A5, A6..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1610KC	"	"	A5	"
3.	"	1500KC	1500KC Signal.	"	A6	"

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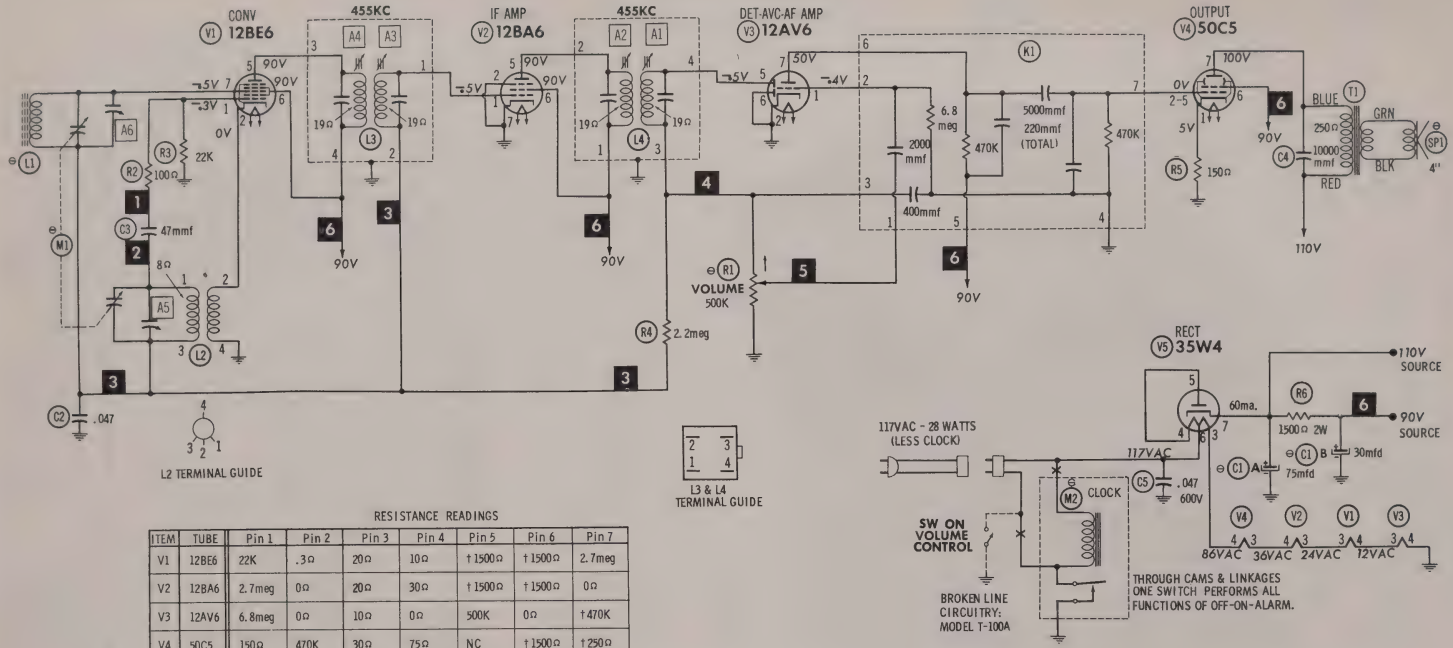
SET 527 FOLDER 4



L2 TERMINAL GUIDE

L3 & L4 TERMINAL GUIDE

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	.3Ω	20Ω	10Ω	†1500Ω	†1500Ω	2.7meg
V2	12BA6	2.7meg	0Ω	20Ω	30Ω	†1500Ω	†1500Ω	0Ω
V3	12AV6	6.8meg	0Ω	10Ω	0Ω	500K	0Ω	†470K
V4	50C5	150Ω	470K	30Ω	75Ω	NC	†1500Ω	†250Ω
V5	35W4	NC	TP	75Ω	115Ω	115Ω	110Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5. NC NO CONNECTION TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

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GENERAL ELECTRIC MODELS C-403A, T-100A

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC •			• RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Converter	12BE6	V4	Output	50C5
V2	IF Amplifier	12BA6	V5	Rectifier	35W4
V3	Det. -AVC-AF Amp.	12AV6			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	G. E. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	75	150	RS-2060	PRS2230	BBRD8415	PWD231	TDLD-11	TVA-2461	Note 1
B	30	150							

Note 1. Model T-100A uses 50-30mfd in this application (Part #RS-3103).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.047 200V		P288N-047	DI-47	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C3	47		DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C4	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C5	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	G. E. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	500K	½	RS-2633①	B-60	A47-500K-Z	Q13-133	U48	Volume
B	Shaft			Not Req.	KS8-3	Not Req.	Not Req.	

① Model T-100A uses Part #RS-3101 (With switch).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	100Ω				R5	150Ω			
R3	22K				R6	1500Ω 2W			
R4	2.2meg								

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	G. E. PART No.	REPLACEMENT DATA
K1	Audio Coupling	220mmf, 400mmf, 2000mmf, 5000mmf, 470K, 470K, 6.8meg	RS-1160	Aerovox PA-684 Centralab PC-331 Sprague DT-9

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		G. E. PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	RS-2632 ①	BC-419	705-A		① Model T-100A uses Part #RS-3121
L2	Osc. Coil	RS-1523				
L3	Input IF	RS-2149	BC-356	13-PC9	RTC-8683	
L4	Output IF	RS-2149	BC-357	13-PC10	RTC-8684	

PRINTED BOARD

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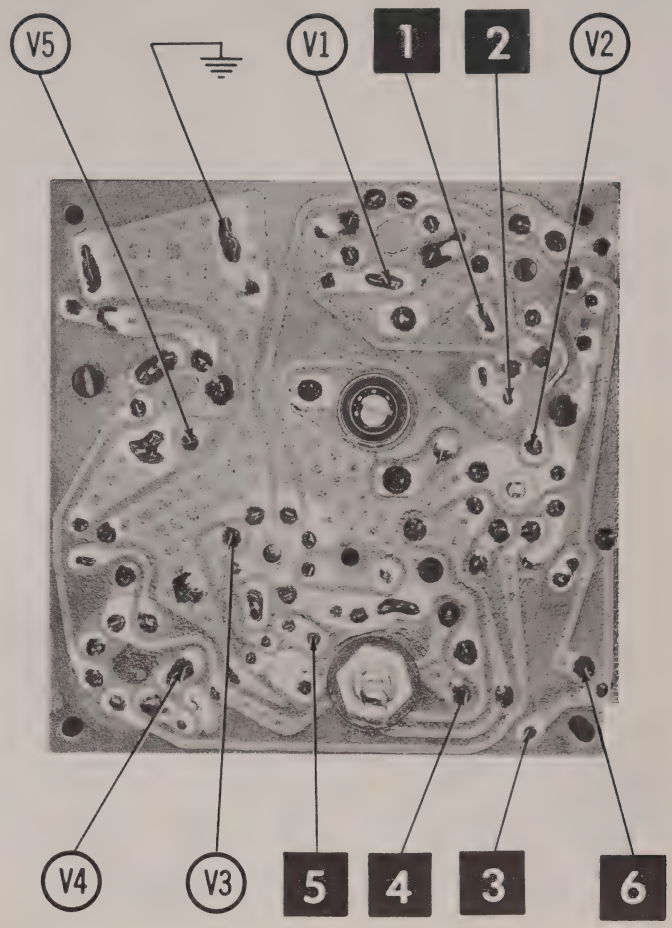
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2700Ω	3-4Ω	RS-2548	A-3025①	A-3332①	24S53 ①	S-12X①	① Use Original Frame

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	G. E. PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	RB-1110 ①	4A05	① Model T-100A uses Part #RB-1057.

MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M1	Tuning Cap.	RS-1524	2 Gang, Model C-403A
	Tuning Cap.	RS-3102	2 Gang, Model T-100A
M2	Clock		Includes Switch (Model C-403 Only)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	RS-2630	Tuning, Model C-403A
Knob	RS-3097	Tuning, Model T-100A
Knob	RS-2040	Volume, Model C-403A
Knob	RS-1264	Volume, Model T-100A
Knob	RS-2628	Clock, Model C-403A
Cabinet	RB-1169	Model C-403A
Cabinet	RB-1205	Model T-100A
Crystal	RS-2626	Clock, Model C-403A
Hands	RS-2629	Complete Set, Model C-403A

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord (Interlock Type) ..... Use BELDEN No. 8874

DISASSEMBLY INSTRUCTIONS

MODEL C-403A

CABINET BACK

1. Remove hex head screw under AC interlock.
2. Disconnect (pull) AC cord from interlock and slide back away and down from cabinet to free top tabs.

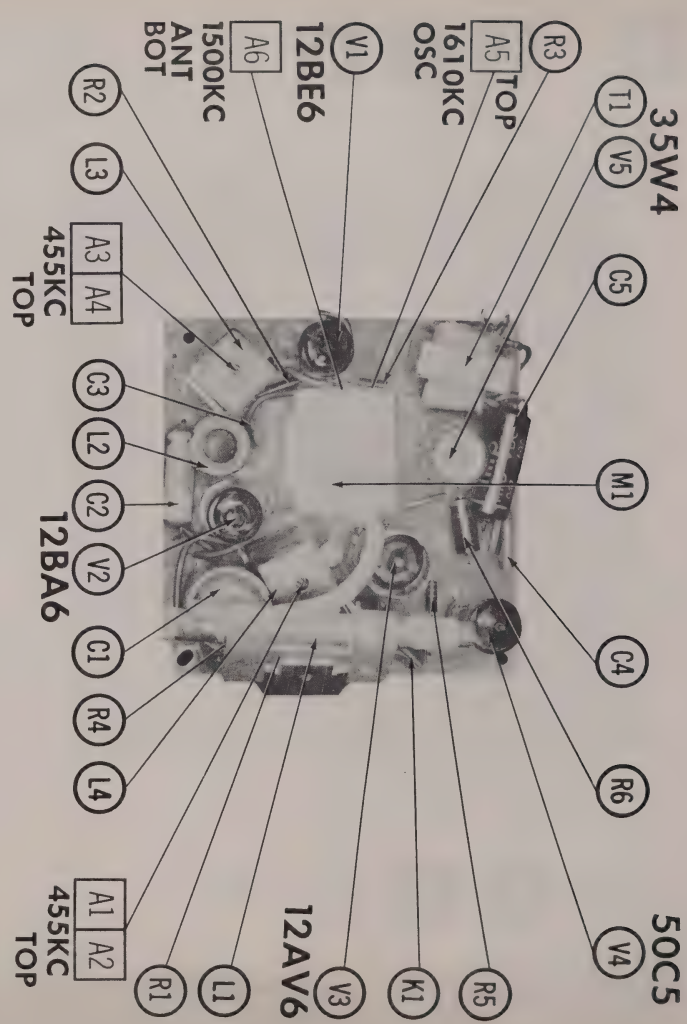
CHASSIS

1. Remove cabinet back. (See above)
2. Remove 5 hex head mounting screws, one in each corner and one in center of board.
3. Remove volume control knob.
4. Remove chassis from cabinet and tuning knob by pulling. Tuning knob is captive and remains with cabinet.

MODEL T-100A

1. Remove 2 screws holding cabinet back.
2. Disconnect (pull) AC cord from interlock and slide back away and down from cabinet.
3. Remove 5 hex head mounting screws. Remove chassis.

CHASSIS—TOP VIEW



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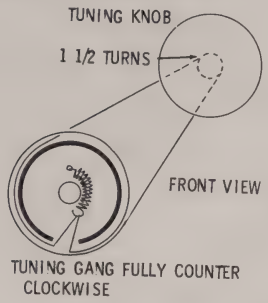
KOWA MODEL KT-66

KOWA MODEL KT-66

TUNING DRIVE CORD STRINGING



KOWA MODEL KT-66

TRADE NAME	Kowa Model KT-66
IMPORTER	Longwood Radio Distributors, Inc., 1261 Broadway, Suite 704, New York 1, N. Y.
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	9 Volts DC RATING 6MA @ 9 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	540 — 1600KC 15MA @ 9 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A4 and A6....GENERAL CEMENT #5000, 5003, 5066, 8271, 8272, 8276, 8277, 8290, 8609, 8722, 9150, 9298
WALSCO #2515, 2516, 2518, 2519, 2525, 2541

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1600KC	1600KC	"	A4	"
3.	"	600KC	600KC	"	A5	"
4.	"	1400KC	1400KC	"	A6	Adjust for maximum output. Repeat Steps 2 thru 4.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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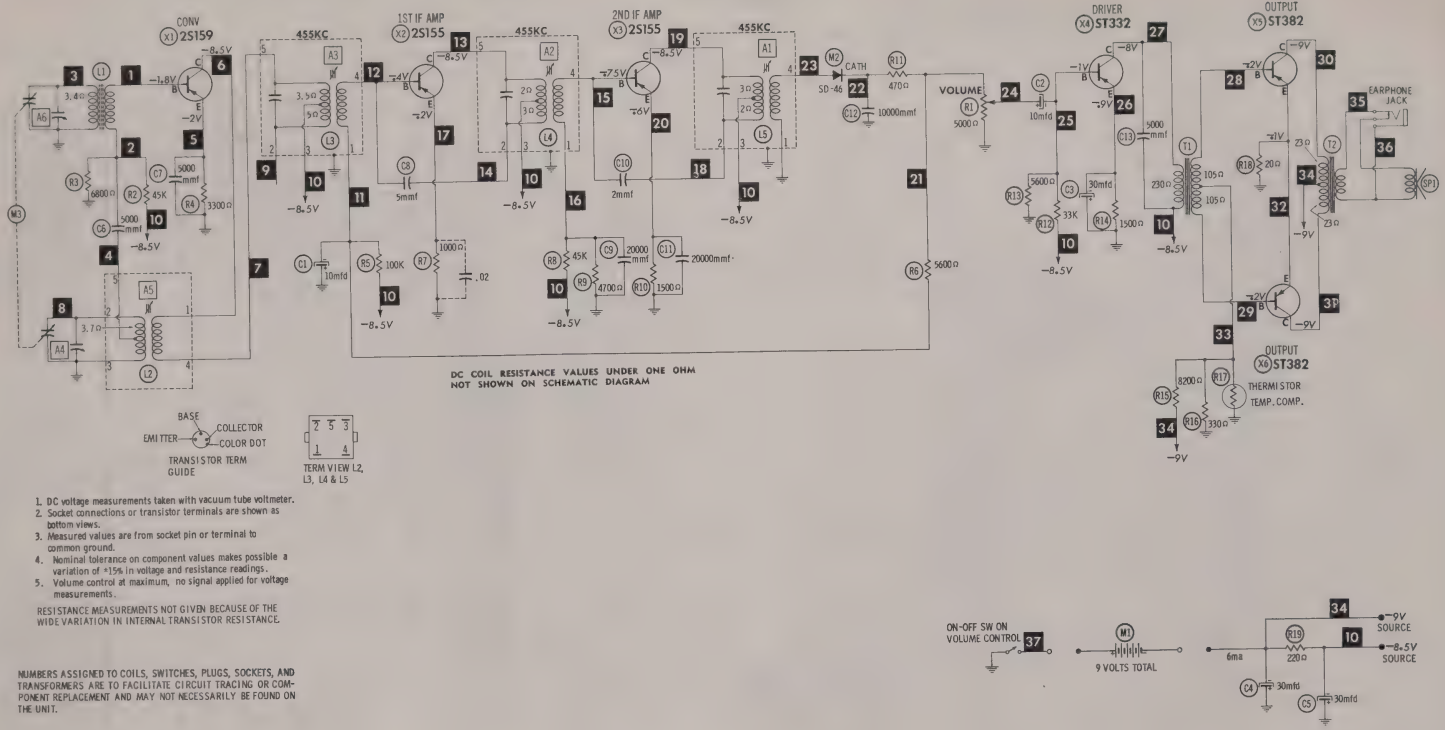
KF494

SET 527 FOLDER 5



1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

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KOWA MODEL KT-66

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2S159	Converter	2N406			PNP
X2	2S155	lst IF Amplifier	2N410			PNP
X3	2S155	2nd IF Amplifier	2N410			PNP
X4	ST332	Driver	2N406			PNP
X5	ST382	Output	2N408			PNP
X6	ST382	Output	2N408			PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	KOWA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	10	3		PTT-3010	NLW10-3	TT3X10	ML10-3	TE-1053	
C2	10	3		PTT-3010	NLW10-3	TT3X10	ML10-3	TE-1053	
C3	30	3		PTT-3030	NLW30-6	TT6X30	MLV40-3	TE-1092	
C4	30	10		PTT-10030	NLW30-15	TT15X30	MLV25-10	TE-1158	
C5	30	10		PTT-10030	NLW30-15	TT15X30	MLV25-10	TE-1158	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	5000		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C7	5000		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C8	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C9	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C10	2		NPO-DI 2.2	DTZ-2R2	C10V2C	CCTO-2R2	CNO-522	10TCC-V22
C11	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C12	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C13	5000		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	KOWA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/4		B16-214				Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	45K				R11	470Ω			
R3	6800Ω				R12	33K			
R4	3300Ω				R13	5600Ω			
R5	100K				R14	1500Ω			
R6	5600Ω				R15	8200Ω			
R7	1000Ω				R16	330Ω			
R8	45K				R17	TEMP. COMP.			
R9	4700Ω				R18	20Ω			
R10	1500Ω				R19	220Ω			

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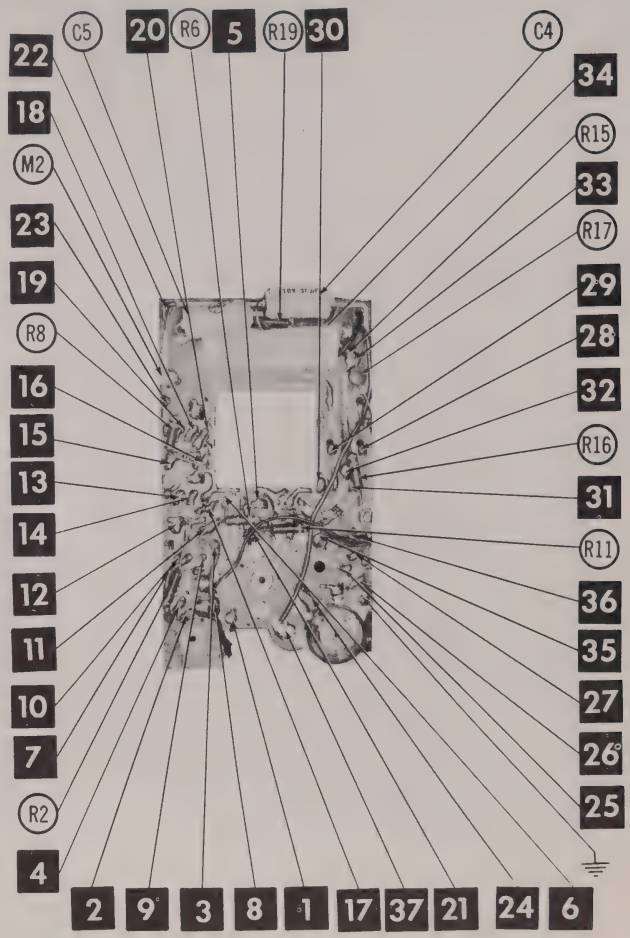


PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		KOWA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick					
L2	Osc.					
L3	1st IF					
L4	2nd IF					
L5	3rd IF					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	KOWA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.4	1	U-410					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	KOWA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	400Ω CT	6-8Ω	U-411		TA-21①			① Use 8Ω secondary.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	KOWA PART No.	QUAM PART No.	
SP1	2 1/4"	PM	6-8Ω		22A06Z8	

BATTERIES

ITEM No.	VOLTAGE	KOWA PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V	006P		2U6		216		M-1604	

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		KOWA PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	SD-46			1N60	1N60	Detector (Pigtail)

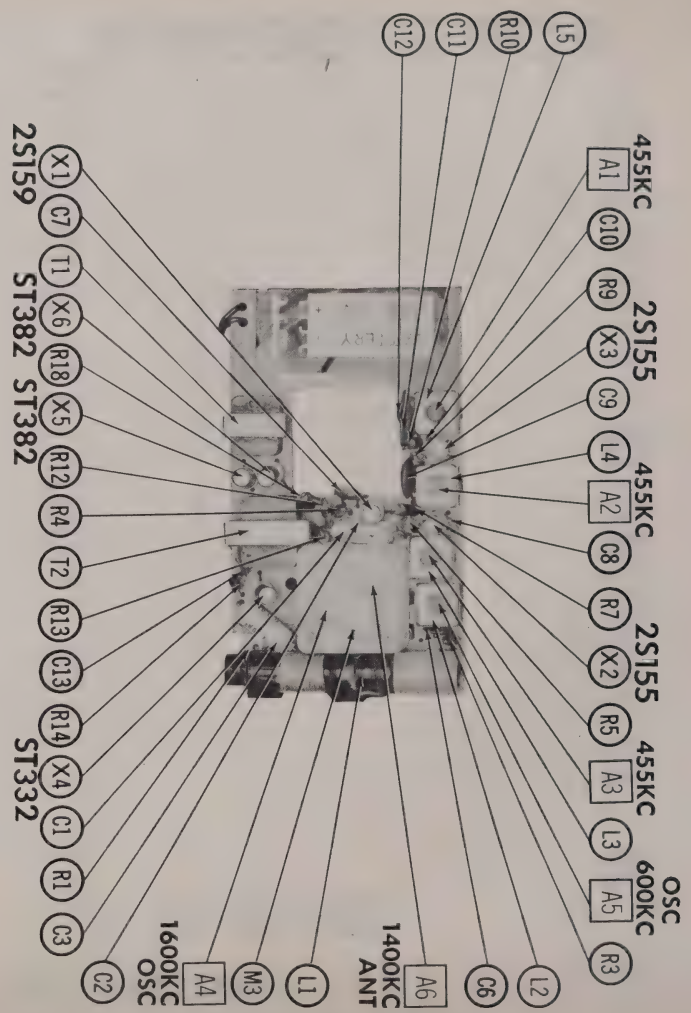
MISCELLANEOUS

ITEM No.	PART NAME	KOWA PART No.	NOTES
M3	Tuning Cap.		2 Gang

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW



PHOTOFACT® Folder

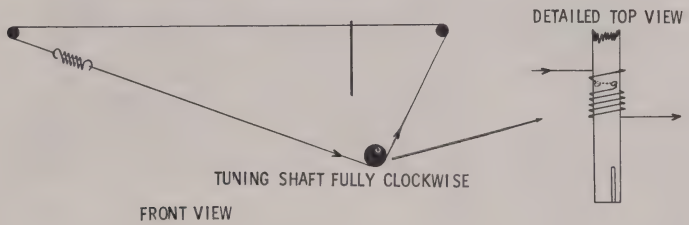
MILLER MODEL 580

MILLER MODEL 580

MILLER MODEL 580

TRADE NAME	Miller Model 580		
MANUFACTURER	J. W. Miller Co., 5917 S. Main Street, Los Angeles 3, California		
TYPE SET	AC Operated 6 Tube FM Tuner		
POWER SUPPLY	110 – 120 Volts AC, 60 Cycles		
TUNING RANGE	88 – 108MC	RATING	26 Watts, .26 Amp. @117 Volts AC

DIAL CORD STRINGING



SET 527 FOLDER 6

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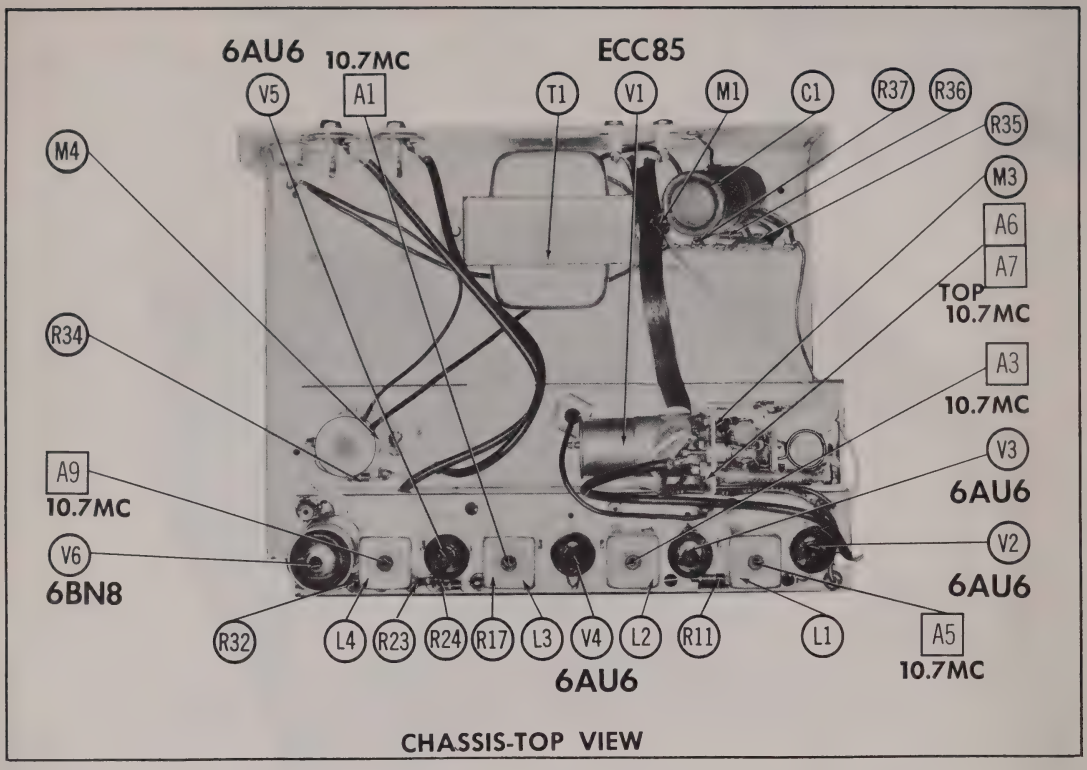
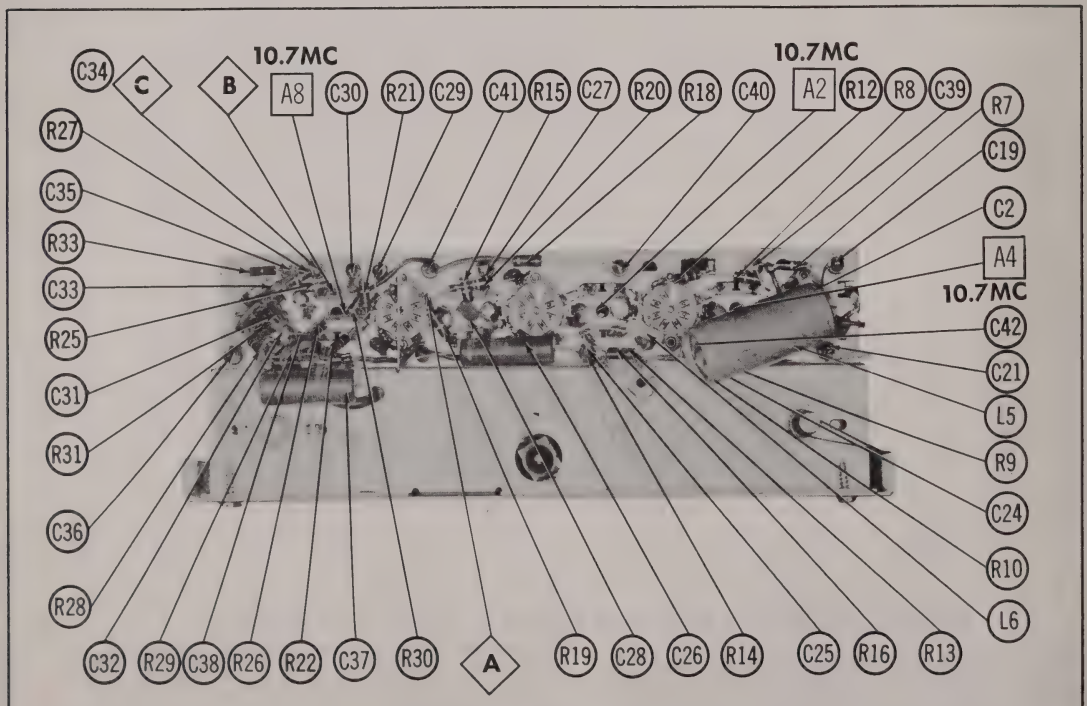
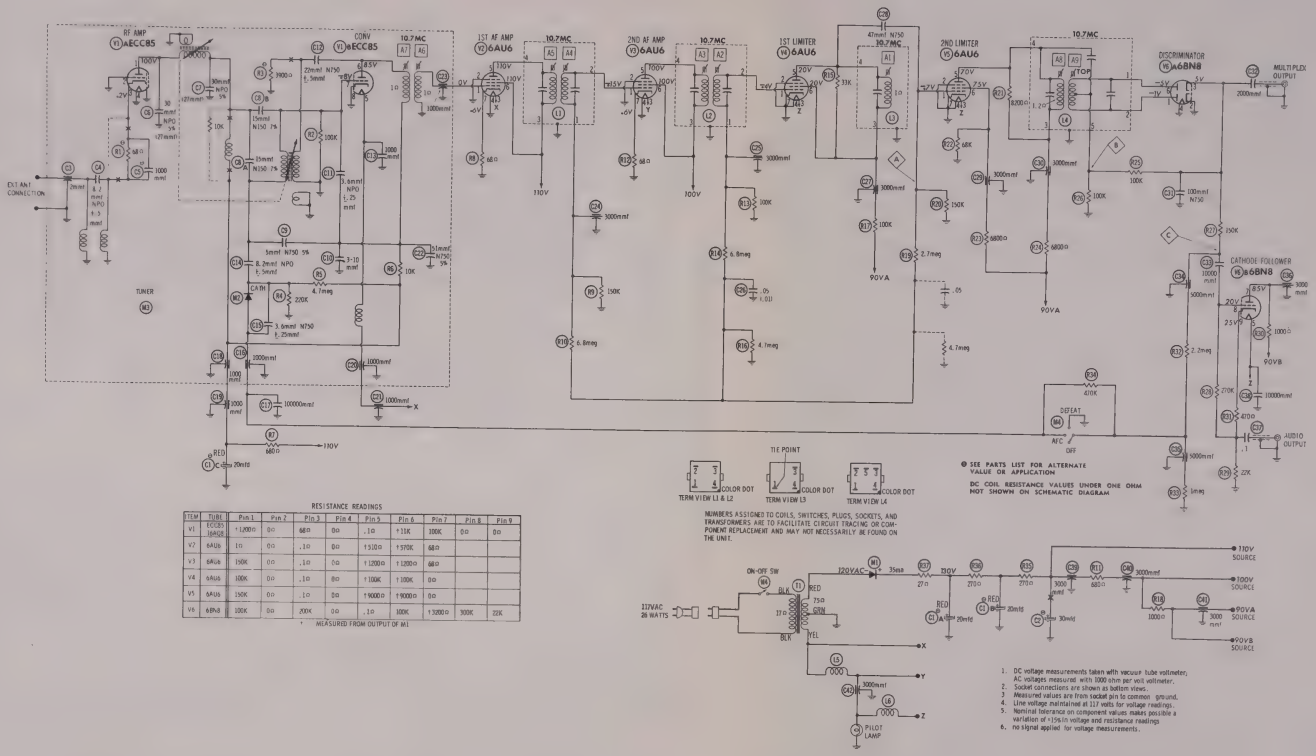
KJ390



CHASSIS-TOP VIEW



CHASSIS-BOTTOM VIEW


RF AMP V1 6ECC85
CONV V1 6ECC85
10.7MC
1ST AF AMP V2 6AU6
2ND AF AMP V3 6AU6
1ST LIMITER V4 6AU6
2ND LIMITER V5 6AU6
DISCRIMINATOR V6 6BN8
CATHODE FOLLOWER V6 6BN8
MULTIPLEX OUTPUT
AUDIO OUTPUT
EXT ANT CONNECTION
TUNER M3
AFC DEFEAT M4
ON-OFF SW M5
117VAC 26 WATTS
PILOT LAMP
TIE POINT
COLOR DOT
TERM VIEW L1 & L2
TERM VIEW L3
TERM VIEW L4
110V
100V
90VA
90VB
6.3V
20V
-2V
-6V
-8V
-10V
-24V
-70V
-115V
-130V
-145V
-165V
-185V
-215V
-245V
-265V
-285V
-305V
-325V
-345V
-365V
-385V
-405V
-425V
-445V
-465V
-485V
-505V
-525V
-545V
-565V
-585V
-605V
-625V
-645V
-665V
-685V
-705V
-725V
-745V
-765V
-785V
-805V
-825V
-845V
-865V
-885V
-905V
-925V
-945V
-965V
-985V
-1005V
-1025V

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Suggested Alignment Tools: A1 Thru A5, A8, A9. . . GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A6, A7. . . . . GENERAL CEMENT #9296, 9297
WALSCO #2546, 2547

IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	Across antenna terminals.	10.7MC (Unmod.)	Point of non-interference.	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4, A5, A6, A7	Adjust for maximum deflection.
2.	"	"	"	DC probe thru 1meg to point Ⓑ. Common to chassis.	A8	"
3.	"	"	"	DC probe to point Ⓒ. Common to chassis.	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	Across antenna terminals.	10.7MC (450KC Swp)	Point of non-interference.	Vert. amp to point Ⓐ. Low side to chassis.	A1, A2, A3, A4, A5, A6, A7	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
2.	"	"	"	Vert. amp thru 47K to point Ⓑ. Low side to chassis.	A8	"
3.	"	"	"	Vert. amp to point Ⓒ. Low side to chassis.	A9	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A 8 for maximum amplitude and straightness of cross-over lines.

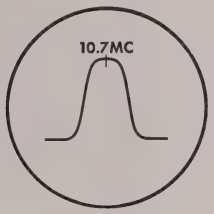


FIG. 1

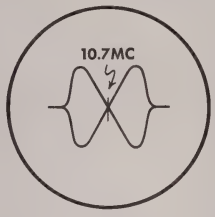
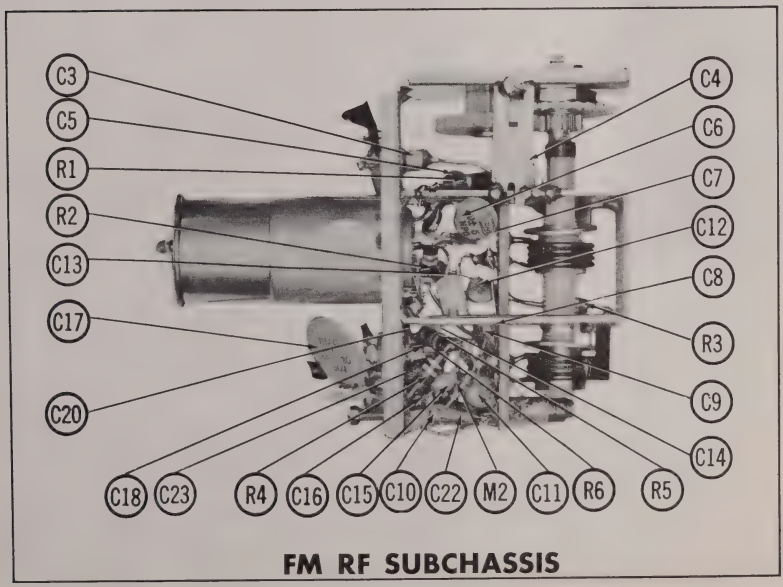


FIG. 2



FM RF SUBCHASSIS

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •)
V1	RF Amp. -Conv.	ECC85/6AQ8
V2	1st IF Amplifier	6AU6
V3	2nd IF Amplifier	6AU6
V4	1st Limiter	6AU6
V5	2nd Limiter	6AU6
V6	Discriminator-Cath. Foll.	6BN8

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA MILLER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	20	150		PRS3500	BBRT22215	TCT3112	TDLT-1	TVA-3440	①
B	20	150							
C	20	150							
C2	30	150		PRS1460	BR3015	TC47	TD-30-150	TVA-1412	②

① Some versions may use 30-30-30mfd in this application.
② Not used in some versions.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	‖							
C4	8.2 NPO ±.5mmf		NPO-DI 8.2		C10V82C			10TCC-V82
C5	1000	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C6	30 NPO 5%	(27) †		TCZ-30	C10Q3C	CCTO-300	CNO-427	10TCC-Q30
C7	30 NPO 5%	(27) †		TCZ-30	C10Q3C	CCTO-300	CNO-427	10TCC-Q30
C8A	15 NI50 7%					*		10TCP-Q15
B	15 NI50 7%					*		10TCP-Q15
C9	5 N750 5%			DTN-5	C10V5U	CCTN-050	CN7-550	10TCU-V50
C10	3-10			829-10				
C11	3.6 NPO ±.25mmf							10TCC-V39
C12	22 N750 5%			DTN-22	C10Q22U		CN7-422	10TCU-Q22
C13	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C14	8.2 NPO ±.5mmf		NPO-DI 8.2		C10V82C			10TCC-V82
C15	3.6 N750 ±.25mmf							
C16	1000		EF-001	MFT-1000		CCF-102	CT280A	
C17	100000			DDA-104	H-05P1	IDP-2-104	TA-010	TG-P10
C18	1000		EF-001	MFT-1000		CCF-102	CT280A	
C19	1000		EF-001	MFT-1000		CCF-102	CT280A	
C20	1000		EF-001	MFT-1000		CCF-102	CT280A	
C21	1000		EF-001	MFT-1000		CCF-102	CT280A	
C22	51 N750 5%			TCN-51	C10Q51U			10TCU-Q51
C23	1000		EF-001	MFT-1000		CCF-102	CT280A	
C24	3000		EF-001	MFT-1000		CCF-102	CT280A	
C25	3000		EF-001	MFT-1000		CCF-102	CT280A	
C26	.05 200V	(.01) †	P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C27	3000		EF-001	MFT-1000		CCF-102	CT280A	
C28	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C29	3000		EF-001	MFT-1000		CCF-102	CT280A	
C30	3000		EF-001	MFT-1000		CCF-102	CT280A	
C31	100 N750		N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C32	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C33	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	5000		EF-001	MFT-1000		CCF-102	CT280A	
C35	5000		EF-001	MFT-1000		CCF-102	CT280A	
C36	3000		EF-001	MFT-1000		CCF-102	CT280A	
C37	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C38	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	3000		EF-001	MFT-1000		CCF-102	CT280A	
C40	3000		EF-001	MFT-1000		CCF-102	CT280A	
C41	3000		EF-001	MFT-1000		CCF-102	CT280A	
C42	3000		EF-001	MFT-1000		CCF-102	CT280A	

Note 1. Not used in some versions.
† Alternate Value
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R1	68Ω			Note 1
R2	100K			
R3	3900Ω			Note 1
R4	220K			
R5	4.7meg			
R6	10K			
R7	680Ω			
R8	68Ω			
R9	150K			
R10	6.8meg			
R11	680Ω			
R12	68Ω			
R13	100K			
R14	6.8meg			
R15	33K			
R16	4.7meg			
R17	100K			
R18	1000Ω			
R19	2.7meg			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R20	150K			
R21	8200Ω			
R22	68K			
R23	6800Ω			
R24	6800Ω			
R25	100K			
R26	100K			
R27	150K			
R28	270K			
R29	22K			
R30	1000Ω			
R31	470Ω			
R32	2.2meg			
R33	1meg			
R34	470K			
R35	270Ω			
R36	270Ω			
R37	27Ω			

Note 1. Not used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA MILLER PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	2nd IF		FM-256	1463-PC	RTC-9046	
L2	3rd IF		FM-256	1463-PC	RTC-9046	
L3	Limiter					
L4	Discriminator			1464-PC	RTC-9050	
L5	Fil. Choke(i.2uh)		BC-561	4602	RTC-8515	
L6	Fil. Choke(i.2uh)		BC-561	4602	RTC-8515	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	REPLACEMENT DATA MILLER PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V@ .26A	120V@ .035A Tap@6.3V@ 2.1A		7660	P-3045	PA-8421	26R38		

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA MILLER PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.035A		1N1763	40H	SR500	Silicon Type

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA MILLER PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M2						AFC Diode (Pigtail)

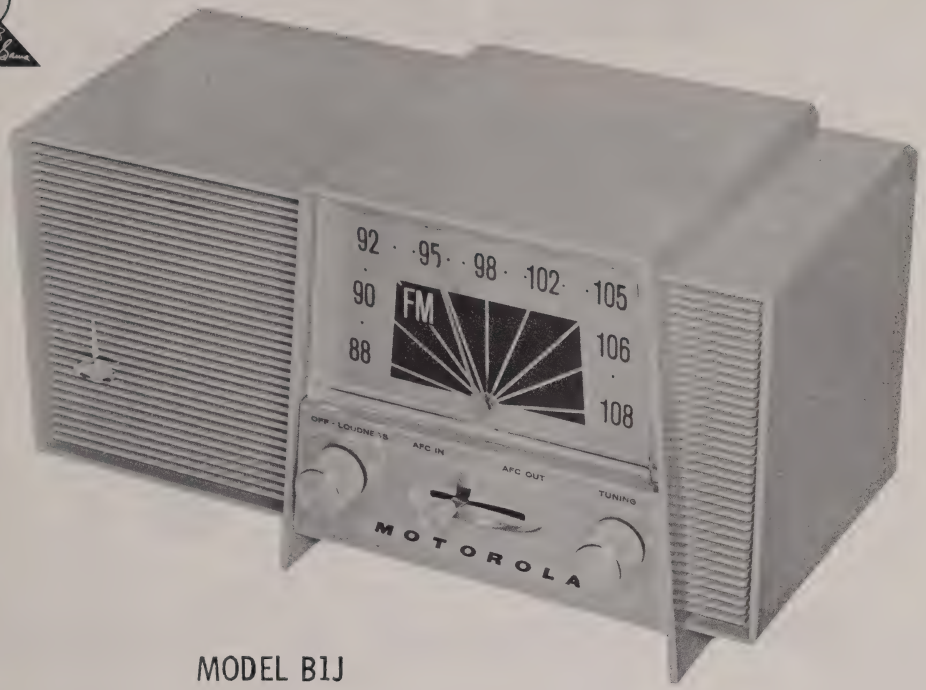
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type) ..... Use BELDEN No. 8874

PHOTOFACT® Folder with CIRCUITRACE®

MOTOROLA MODELS
B1J, B1W (Ch. HS-819)

MOTOROLA MODELS
B1J, B1W (Ch. HS-819)

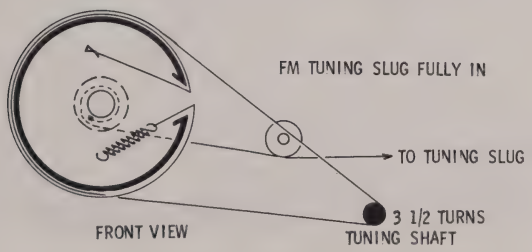


MODEL B1J

MOTOROLA MODELS
B1J, B1W (Ch. HS-819)

TRADE NAME	Motorola Models B1J, B1W (Ch. HS-819)
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois
TYPE SET	AC-DC Operated 6 Tube FM Receiver
POWER SUPPLY	110 -120 Volts AC-DC RATING 28 Watts, .3 Amp. @117 Volts AC
TUNING RANGE—FREQ. MOD.	88 — 108MC

TUNING DRIVE CORD STRINGING



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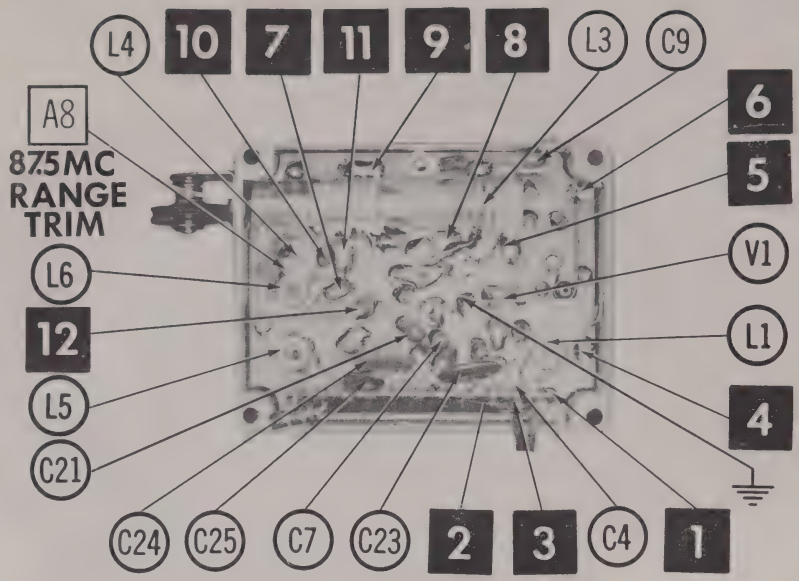
SET 527 FOLDER 7



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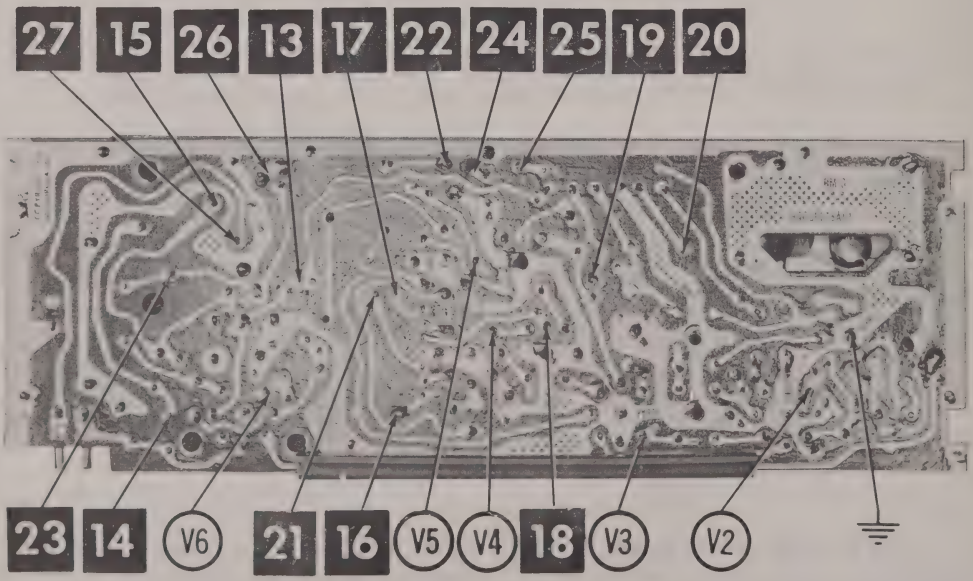
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



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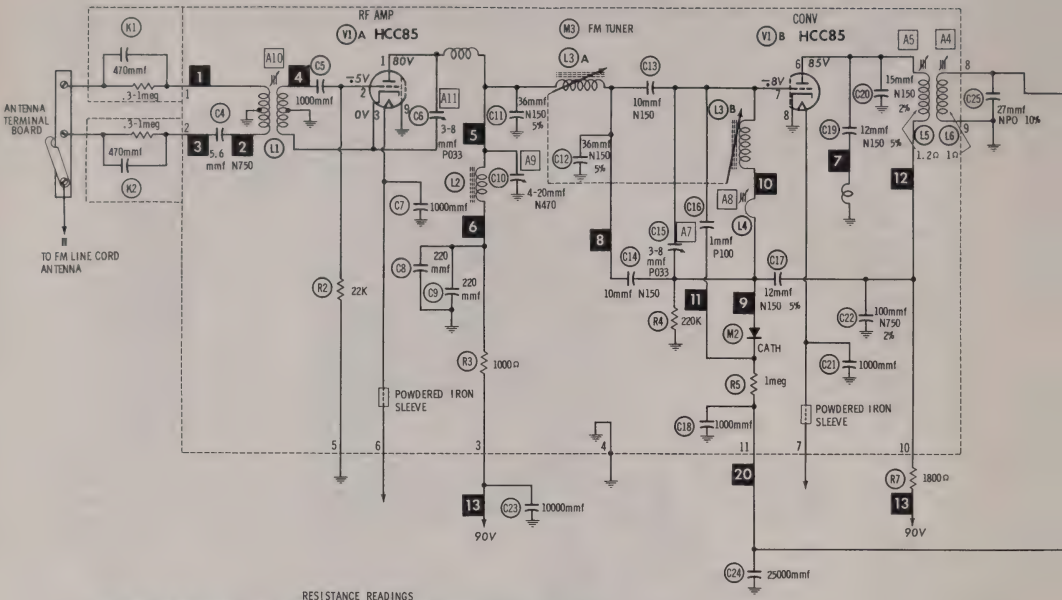
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

CHASSIS TOP VIEW

MOTOROLA MODELS
B1J, B1W (Ch. HS-819)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	HCC85	†2100Ω	22K	0Ω	335Ω	320Ω	†2900Ω	220K	0Ω	0Ω
V2	12BA6	1Ω	0Ω	320Ω	310Ω	†2100Ω	†2100Ω	82Ω		
V3	12BA6	1.4Ω	0Ω	310Ω	300Ω	†1400Ω	†1400Ω	82Ω		
V4	12AL5	2meg	2meg	0Ω	10Ω	7800Ω	0Ω	8300Ω		
V5	12AV6	6.8meg	0Ω	285Ω	300Ω	0Ω	NC	†470K		
V6	50C5	150Ω	470K	335Ω	405Ω	NC	†1100Ω	†305Ω		

ALL MEASUREMENTS MADE WITH AFC IN "IN" POSITION.
† MEASURED FROM OUTPUT OF M1.

NC NO CONNECTION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE

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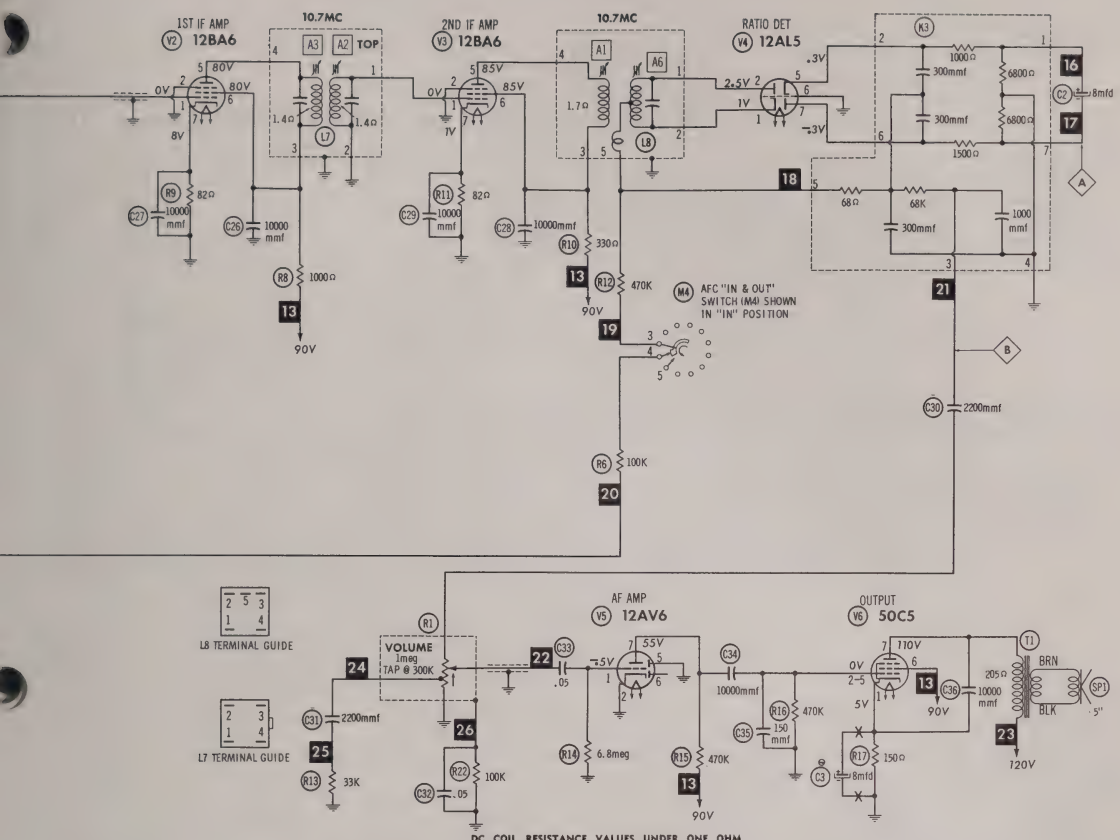
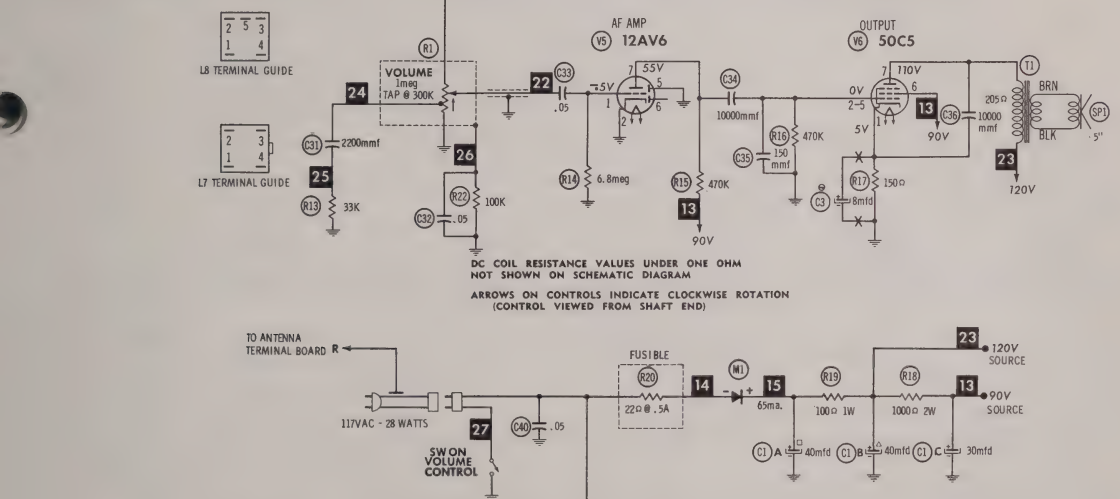
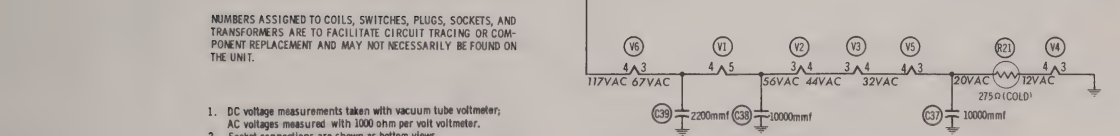




DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MOTOROLA MODELS
B1J, B1W (Ch. HS-819)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.
Suggested Alignment tools: A1, A2, A3, A6.....GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A4, A5, A10 ..... GENERAL CEMENT #8282, 8606, 8606-L, 9091
WALSCO #2526, 2541, 2542, 2543, 2544
A7, A8, A9..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	Across antenna terminals A and B .	10.7MC (Unmod.)	Point of non-interference.	DC probe to point Ⓐ . Common to chassis.	A1, A2, A3, A4, A5	Adjust for maximum deflection.
2.	"	"	"	DC probe to point Ⓑ . Common to chassis.	A6	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	Across antenna terminals A and B .	10.7MC (450KC Swp)	Point of non-interference.	Vert. amp. to point Ⓐ . Low side to chassis.	A1, A2, A3, A4, A5	Disconnect stabilizing Capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C2.
2.	"	"	"	Vert. amp. to point Ⓑ . Low side to chassis.	A6	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A1 for maximum amplitude and striaghtness of cross-over lines.

RF ALIGNMENT

AFC Off

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
3.	Across antenna terminals A and B .	108.5MC (Unmod.)	High end stop.	DC probe to point Ⓐ . Common to chassis.	A7	Adjust for maximum deflection.
4.	"	87.5MC	Low end stop.	"	A8	Adjust for maximum deflection. Repeat Steps 3 and 4.
5.	"	94MC	94MC Signal.	"	A9	Adjust for maximum deflection.
6.	"	90MC	90MC Signal.	"	A10	Adjust for maximum deflection. Repeat Steps 5 and 6.
7.	If oscillators occur at any point on the dial scale, back A10 out of coil form as far as possible then adjust A11 until oscillation stops, consistant with maximum sensitivity. Repeat Steps 5 and 6.					

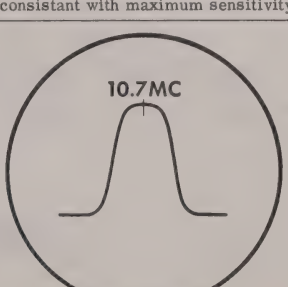


FIG. 1

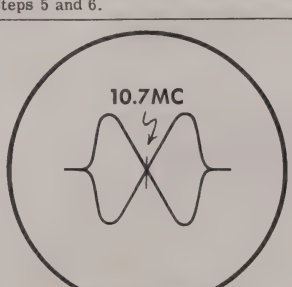


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.-Conv.	HCC85	V4	Ratio Detector	12AL5
V2	1st IF Amplifier	12BA6	V5	AF Amplifier	12AV6
V3	2nd IF Amplifier	12BA6	V6	Output	50C5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■40	150	23B639496	PWH3-11-30	C0090 †	PFP311.63	TMT-3127 ‡	PCL-3441.2	
B	▲40	150							
C	30	150							
C2	8	50	23A638536	PTT50008	NLW8-100	TT150X8	MLV10-50	TE-1303.3	
C3	8	50	23A638536	PTT50008	NLW8-100	TT150X8	MLV10-50	TE-1303.3	①

† Use printed circuit adapters #55277 & 55278.
‡ Use printed circuit adapter kit TMA.
① Not used in some versions.

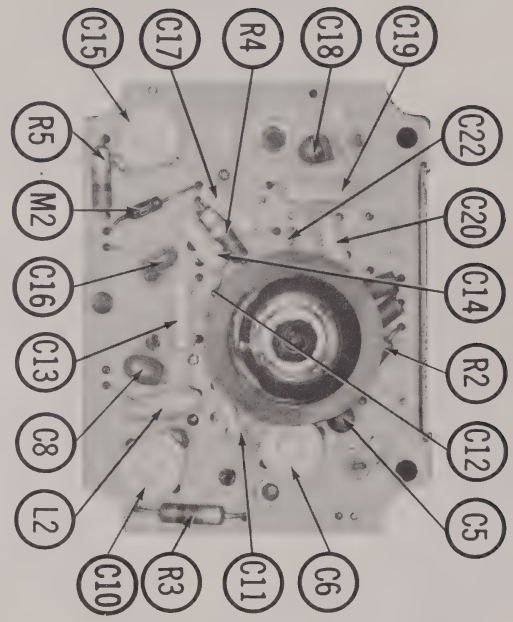
FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	5.6 N750	#21K647194						
C5	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C6	3-8 P033	#20K646183						
C7	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C8	220		DI-220	DD-221	L10T22	CCD-221	B-322	10TS-T22
C9	220		DI-220	DD-221	L10T22	CCD-221	B-322	10TS-T22
C10	4-20 N470	#20K646185						
C11	36 N150 5%	#21K646186				*		10TCP-Q39
C12	36 N150 5%	#21K646186				*		10TCP-Q39
C13	10 N150	#21K646187				*		10TCP-Q10
C14	10 N150	#21K646187				*		10TCP-Q10
C15	3-8 P033	#20K646183						
C16	1 P100	#21K646188				*		
C17	12 N150 5%	#21K646189				*		10TCP-Q12
C18	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C19	12 N150 5%	#21K646189				*		10TCP-Q12
C20	15 N150 2%	#21K646190				*		
C21	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C22	100 N750 2%	#21K646191		TCZ-100				
C23	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	25000	#21K740806						5HK-S25
C25	27 NPO 10%		NPO-DI 25	TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C26	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C28	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C30	2200		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C31	2200		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C32	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C33	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C34	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	150		DI-150	DD-151	L10T15	CCD-151	B-315	10TS-T15
C36	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C37	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C38	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	2200		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C40	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50

Motorola Part Number.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FM RF SUBCHASSIS



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	1meg 300K Tap	½	18B60185A01	BT-73	A47F-1meg	Q13-137X	UT-438	Loudness
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			KR-1	SWE-12	76-1	US-26	Power Off-On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	22K				R13	33K			
R3	1000Ω				R14	6.8meg			
R4	220K				R15	470K			
R5	1meg				R16	470K			
R6	100K				R17	150Ω			
R7	1800Ω				R18	1000Ω 2W			
R8	1000Ω				R19	100Ω 1W			
R9	82Ω				R20	22Ω@.5A			Pt.#65K647003
R10	330Ω				R21	275Ω Cold			Pt. #6B643916
R11	82Ω				R22	100K			
R12	470K								

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MOTOROLA PART No.	REPLACEMENT DATA
K1	Ant. Filter	470mmf -.3-1meg	51K754068	Centralab RC-471 Sprague AC1-1
K2	Ant. Filter	470mmf -.3-1meg	51K754068	Centralab RC-471 Sprague AC1-1
K3	Rat. Det. Network	(3) 300mmf, 1000mf, 68Ω, 1000Ω, 1500Ω, (2) 6800Ω, 68K	51K647082	Aerovox PA-604 Centralab PC-342 Sprague C-12

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Ant.	24K646196				
L2	RF Choke	24K646193				
L3A	RF	24K646194				
B	Osc.					
L4	Range Trimmer	3K646195				
L5	1st IF Prim	1K646537				
L6	1st IF Sec.	1K646537				
L7	2nd IF	24K647049	FM-256	1463-PC	RTC-9046	
L8	Ratio Detector	24C647050	FM-257	1465-PC	RTC-9053	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2900Ω	3-4Ω	25C640766E ①	A-2928②	A-3876②	22S46②	S-1X ②	① Alternate Part # 25C640766. ② Use Original Frame.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	5"	PM	3-4Ω	50C60151A02	5A07	

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	MOTOROLA PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.065A	48K646954 *	1N1763 ♦	150 *	SR200 ♦	* Selenium ♦ Silicon

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2		48K646192				FM AFC (Part of M3)

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M3	FM Tuner	77K647193	Complete, Less Tube
M4	Switch	40C60205A02	AFC (Rotary Wafer Type)
	Printed Board	1V60036A20	Less All Components (Includes Interlock Plug Controls and Printed Board #84C60218A01)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	36B60147A01	Volume, Tuning (White) Model BlW
Knob	36B60147A02	Volume, Tuning (Jade) Model BlJ
Knob	36B60167A01	AFC (White) Model BlW
Knob	36B60167A02	AFC (Jade) Model BlW
Dial Crystal	61C60150A01	
Dial Scale	34C60181A02	
Dial Pointer	1V60030A54	
Cabinet	1V60030A52	White, Model BlW
Cabinet	1V60030A53	Jade, Model BlJ

WIRING DATA

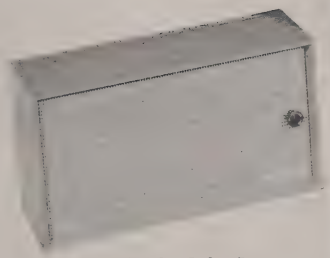
General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord (Interlock Type) ..... Use BELDEN No. 8874

PHOTOFACT® Folder

PACKARD BELL MODELS RPC-4, SA-10

PACKARD BELL MODELS
RPC-4, SA-10



MODEL SA-10

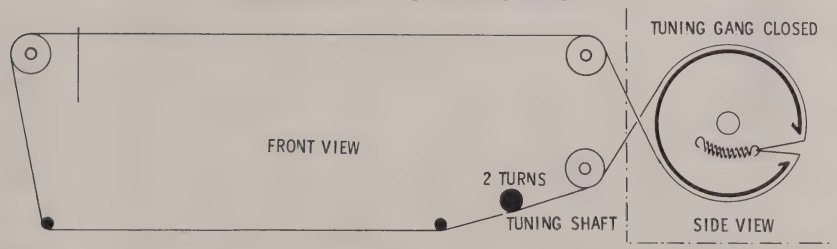
MODEL RPC-4

PACKARD BELL MODELS
RPC-4, SA-10

TRADE NAME	Packard Bell Models RPC-4 (Tuner Ch. 7TU2, Amp. Ch. PA-10-1), SA-10 (Amp. Ch. PA-10)
MANUFACTURER	Packard Bell Electronics Corp., Service Div., 1920 S. Figueroa St., Los Angeles 7, California
TYPE SET	AC Operated 7 Tube FM-AM Tuner, 2 Tube Audio Amplifier and 4 Speed Automatic Record Changer (Model SA-10 is External Amplifier for Channel 2)
POWER SUPPLY	110 – 120 Volts AC, 60 Cycles RATING 57 Watts, .55 Amp. @117 Volts AC (Model RPC-4) 33 Watts, .32 Amp. @117 Volts AC (Model SA-10)
TUNING RANGES—BROADCAST	530 – 1620KC FREQ. MOD. 88 – 108MC

FOR SERVICE INFORMATION ON RECORD CHANGER PART #58076 – SEE V-M 1201 – PHOTOFACT SET 436 FOLDER 18 OR RECORD CHANGER MANUAL RC-12

DIAL CORD STRINGING



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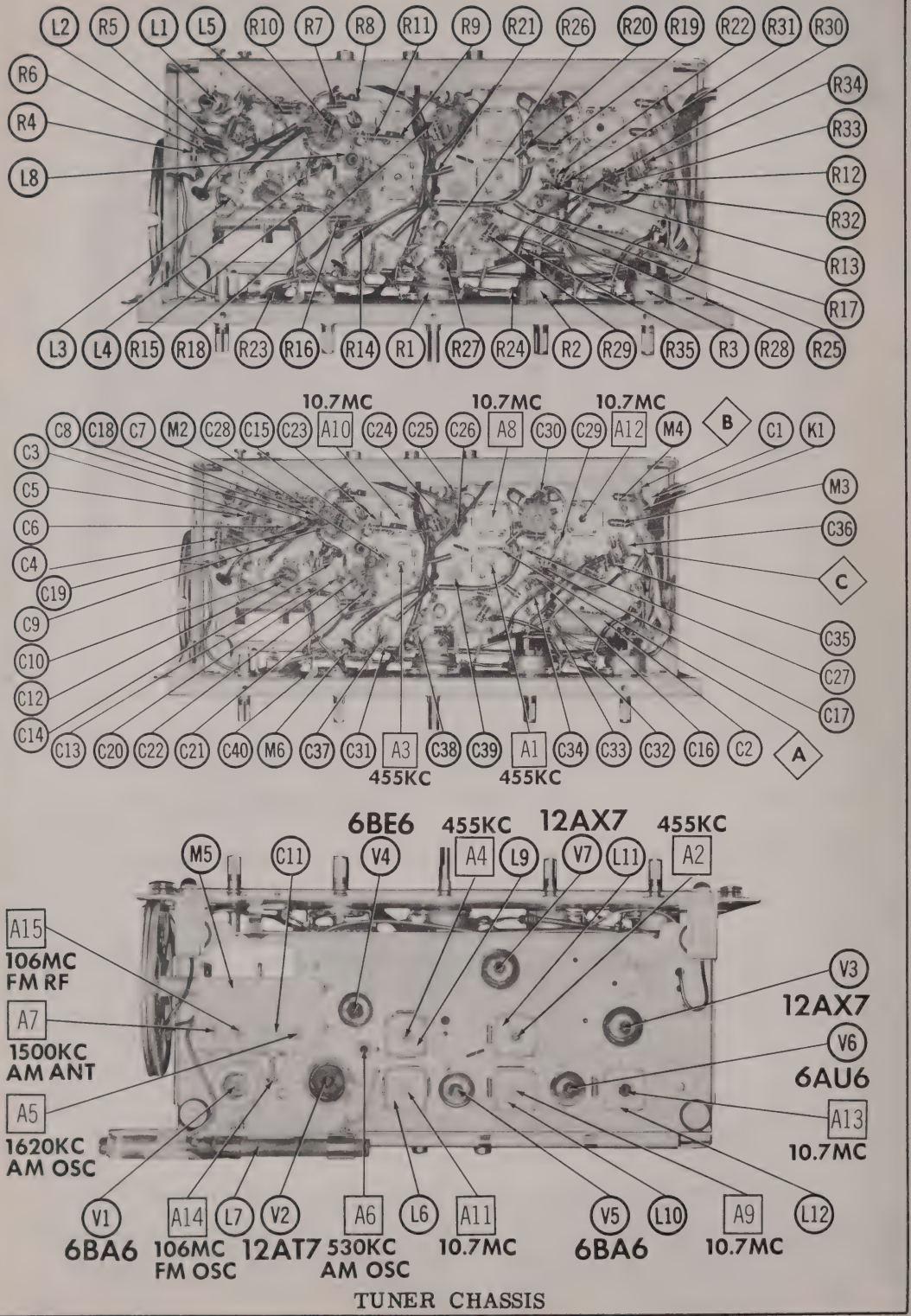
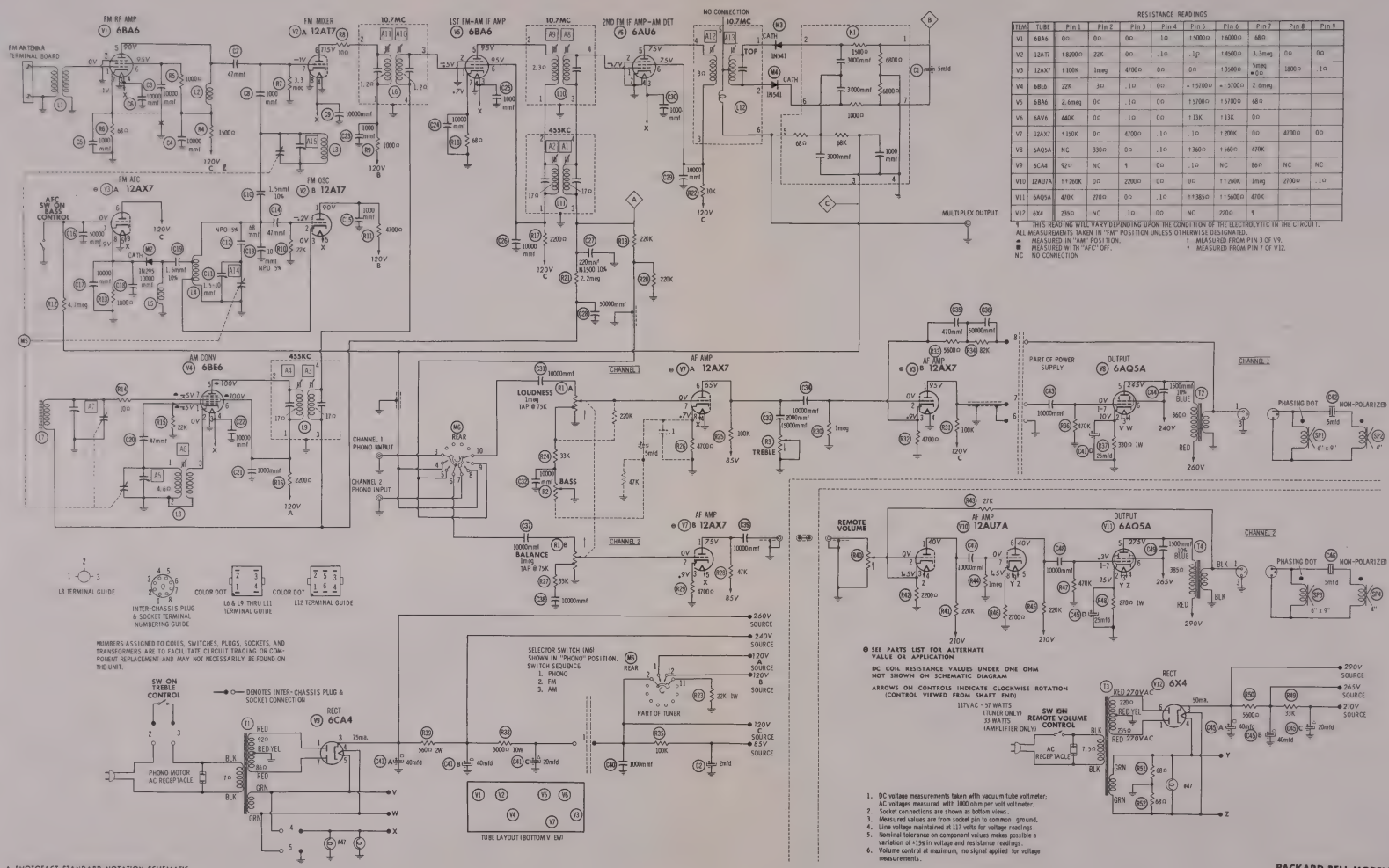
KN387

SET 527 FOLDER 8



TUNER CHASSIS



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	0Ω	0Ω	0Ω	1Ω	†500Ω	†600Ω	68Ω		
V2	12AT7	†820Ω	22K	0Ω	.1Ω	.1Ω	†450Ω	3.3meg	0Ω	0Ω
V3	12AX7	†100K	1meg	470Ω	0Ω	0Ω	†350Ω	5meg ♦0Ω	180Ω	.1Ω
V4	6BE6	22K	3Ω	.1Ω	0Ω	+15700Ω	+57000Ω	2.6meg		
V5	6BA6	2.6meg	0Ω	.1Ω	0Ω	†570Ω	†570Ω	68Ω		
V6	6AV6	440K	0Ω	.1Ω	0Ω	†13K	†13K	0Ω		
V7	12AX7	†150K	0Ω	470Ω	.1Ω	.1Ω	†200K	0Ω	470Ω	0Ω
V8	6AQ5A	NC	330Ω	0Ω	.1Ω	†360Ω	†360Ω	470K		
V9	6CA4	92Ω	NC	¶	0Ω	.1Ω	NC	86Ω	NC	NC
V10	12AU7A	††260K	0Ω	2200Ω	0Ω	0Ω	††260K	1meg	2700Ω	.1Ω
V11	6AQ5A	470K	270Ω	0Ω	.1Ω	††385Ω	††560Ω	470K		
V12	6X4	235Ω	NC	.1Ω	0Ω	NC	220Ω	¶		

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
♦ MEASURED IN "AM" POSITION.
■ MEASURED WITH "AFC" OFF.
NC NO CONNECTION
† MEASURED FROM PIN 3 OF V9.
†† MEASURED FROM PIN 7 OF V12.

⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

117VAC - 57 WATTS (TUNER ONLY) 33 WATTS (AMPLIFIER ONLY)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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PACKARD BELL MODELS RPC-4, SA-10

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Loudness control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:

A1 thru A4	GENERAL CEMENT #5097, 8727 WALSCO #2515
A5, A7, A14, A15	GENERAL CEMENT #5004, 5008, 5009 WALSCO #2520
A6, A12, A13	GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440 WALSCO #2526, 2543, 2544, 2545
A8 thru A11	GENERAL CEMENT #8721, 8722 WALSCO #2519

AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru .01mfd to pin 7 (grid) of AM Converter. Low side to chassis.	455KC (400∿ AM Mod.)	(AM) Tuning gang fully closed.	DC probe to point (A). Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2.	Loop	1620KC	Tuning gang fully open.	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	530KC	Tuning gang fully closed.	"	A6	Adjust for maximum deflection. Repeat Steps 2 and 3.
4.	"	1500KC	1500KC Signal.	"	A7	Adjust for maximum deflection.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	High side thru .01mfd to pin 7 (grid) of FM Mixer. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point (A). Common to chassis.	A8, A9, A10, A11	Adjust for maximum deflection.
6.	"	"	"	DC probe to point (B). Common to chassis.	A12	"
7.	"	"	"	DC probe to point (C). Common to chassis.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	High side thru .01mfd to pin 7 (grid) of FM Mixer. Low side to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. to point (A). Low side to chassis.	A8, A9, A10, A11	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
6.	"	"	"	Vert. amp. to point (B). Low side to chassis.	A12	Disconnect stabilizing Capacitor C1. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C1.
7.	"	"	"	Vert. amp. to point (C). Low side to chassis.	A13	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A8 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT — SELECTOR IN FM POSITION

Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	Across FM antenna terminals with 150Ω in each lead.	106MC (Unmod.)	(FM) 106MC	DC probe to point (B). Common to chassis.	A14, A15	Adjust for maximum deflection.
9.	"	92MC	92MC	"	L4, L3	Adjust in order for maximum deflection.

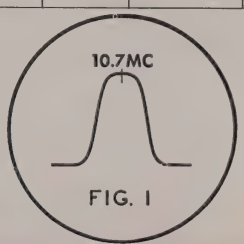


FIG. 1

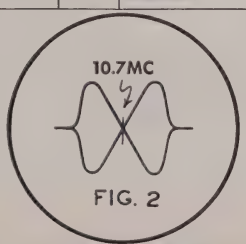


FIG. 2

TUNER PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	FM RF Amplifier	6BA6	V5	1st FM-AM IF Amp.	6BA6
V2	FM Mixer-FM Osc.	12AT7	V6	2nd FM IF Amp. -AM Det.	6AU6
V3	FM AFC-Ch. 1 AF Amp.	12AX7 (7025) *	V7	Channel 1 AF Amp. - Channel 2 AF Amp.	12AX7 (7025) *
V4	AM Converter	6BE6			

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Packard Bell PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	5	50	24164	PTT-50005	BBR5-50	TC30	TD-5-50	TVA-1303	
C2	2	350	24165	PRS1705	BR245	TC595	TD-2-450	TVA-1701	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C4	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C5	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C7	47		DI-47	DD-470	Li0Q47	CCD-470	GP447	10TS-Q47
C8	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C9	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C10	1, 5 10%		NPO-SI 1. 5	TCZ-1R5	C10V15C		CNO-515	10TCC-V15
C11	1, 5-10	#23430		829-10				
C12	68 NPO 5%			DTZ-68	C10Q68C		CNO-468	10TCC-Q68
C13	10 NPO 5%		NPO-DI 10	DTZ-10	C10Q1C		CNO-410	10TCC-Q10
C14	47		DI-47	DD-470	Li0Q47	CCD-470	GP447	10TS-Q47
C15	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C16	50000		BPD-05	DD-503	H-05S5	1DP-2-503	TA-150	TG-S50
C17	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C18	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C19	1, 5 10%		NPO-SI 1. 5	TCZ-1R5	C10V15C		CNO-515	10TCC-V15
C20	47		DI-47	DD-470	Li0Q47	CCD-470	GP447	10TS-Q47
C21	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C22	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C24	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C26	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	220 N1500 10%	#23915				*		
C28	50000		BPD-05	DD-503	H-05S5	1DP-2-503	TA-150	TG-S50
C29	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C30	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C31	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C32	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C33	2000	(5000) †	BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C34	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C36	50000		BPD-05	DD-503	H-05S5	1DP-2-503	TA-150	TG-S50
C37	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C38	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C40	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
# Packard Bell Part Number.
† Alternate Value.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard Bell PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg 75K Tap	½	25080					Loudness, Channel 1
B	1meg 75K Tap	½						Balance, Channel 2
R2A	500K	½	25081	BPL-60	C47S-500K-Z	(Bi3-133) *	PP55A	Bass, AFC-Switch
B	Shaft			Not Req.	KSS-3	SK7	Not Req.	
R3A	500K	½	25081	BPL-60	C47S-500K-Z	(Bi3-133) *	PP55A	Treble, Power On-Off
B	Shaft			Not Req.	KSS-3	SK7	Not Req.	

* Alternate replacement-PPQ13-133 (SK7).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R4	1500Ω			
R5	1000Ω			
R6	68Ω			
R7	3. 3meg			
R8	10Ω			
R9	1000Ω			
R10	22K			
R11	4700Ω			
R12	4. 7meg			
R13	1800Ω			
R14	10Ω			
R15	22K			
R16	2200Ω			
R17	2200Ω			
R18	68Ω			
R19	220K			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R20	220K			
R21	2. 2meg			
R22	10K			
R23	22K 1W			
R24	33K			
R25	100K			
R26	4700Ω			
R27	33K			
R28	47K			
R29	4700Ω			
R30	1meg			
R31	100K			
R32	4700Ω			
R33	5600Ω			
R34	82K			
R35	100K			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Packard Bell PART No.	REPLACEMENT DATA
K1	Ratio Detector Network	(3) 300mmf, 1000mmf, 68Ω, 1000Ω, 1500Ω, (2) 6800Ω, 68K	23627A	Aerovox PA-694 Centralab PC-342 Sprague C-12

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA Packard Bell PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	FM Ant. Trans.	29426A				
L2	RF Choke (1uh)	29124	BC-561	4602	RTC-8515	
L3	FM RF	29165				
L4	FM Osc.	29243A				
L5	RF Choke (1uh)	29124	BC-561	4602	RTC-8515	
L6	1st FM IF	29148	FM-254	1463	RTC-8599	
L7	Loopstick	29364	BC-419	705-A		
L8	AM Osc.	29247B	BC-393	71-OSC	RTC-8648	
L9	1st AM IF	29077	BC-352	12-C1	RTC-8632	
L10	2nd FM IF	29152	FM-254	1463	RTC-8599	
L11	2nd AM IF	29078	BC-353	12-C2	RTC-8633	
L12	Ratio Detector	29084	FM-255	1465	RTC-8600	

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA Packard Bell PART No. CARTRIDGE	Packard Bell PART No. NEEDLE*	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE*	ELECTRO-VOICE PART No.	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE*	NOTES
M1			13TB	Not Req.	26S	S1-1 * & S3-3 *	8TA4-S	N-8TA-S *

TUNER PARTS LIST AND DESCRIPTIONS (Continued)

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		Packard Bell PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N295	72028		1N295	1N295	AFC Diode (Pigtail)
M3	1N541	72027		1N295	1N295	FM Detector (Pigtail)
M4	1N541	72027		1N295	1N295	FM Detector (Pigtail)

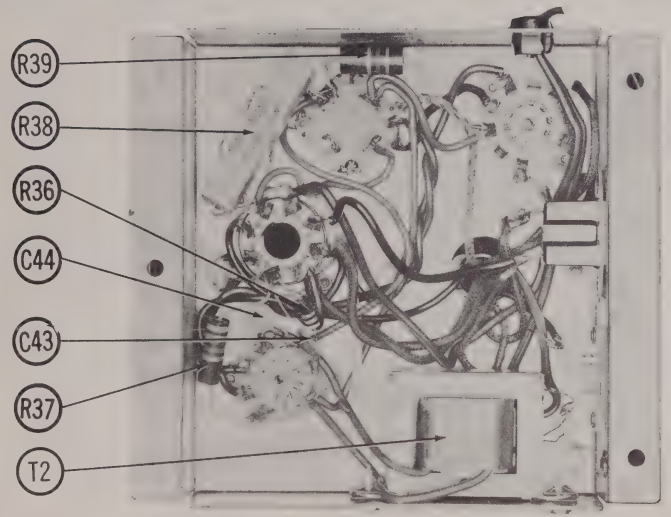
MISCELLANEOUS

ITEM No.	PART NAME	Packard Bell PART No.	NOTES
M5	Tuning Cap.	23557	4 Gang (AM Section: Ant. 31—328mmf, Osc.14—120mmf)
M6	Switch	86080	Function Selector (Rotary Wafer Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial Glass	38189-1	Tuner
Dial Pointer	67048	Tuner
Knob	52305	Tuner, Loudness (Outer)
Knob	52308	Tuner, Loudness (Inner)
Knob	52306	Tuner, Tuning, Tone, Selector
Knob	52260A	Model SA-10, Volume



MODEL PA—10—1 CHASSIS

MODEL PA—10—1 PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE
V8	Channel 1 Output	6AQ5A

ITEM No.	USE	TYPE
V9	Rectifier	6CA4 (EZ81) *

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	Packard Bell PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C41A	■40	350	24092	AFH4-52	D0430	FP419.3	TMQ-4241	TVL-4621.6	
B	▲40	350							
C	▲20	350							
D	25	25							
C42	5	25NP	24146	PRS7405	BBR4-150	TCN504		*TVANS-1303.1	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C43	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C44	1500 10%		DI-1500	DD-152	PM6D15	CCD-152	GP215	10TS-D15

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R36	470K				R38	3000Ω 10W	PW10-3000	10W-SQ-3000	
R37	330Ω 1W				R39	560Ω 2W			

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	Packard Bell PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V @ .55A	460VCT @ .075A DC	6.3V @ 3.6A	89085					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Packard Bell PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	4000Ω	3-4Ω	89436F	A-2930	A-3877	24S05		

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Packard Bell PART No.	QUAM PART No.	
SP1	6"x 9"	PM	3-4Ω	83112B	69A3	
SP2	4"	PM	3-4Ω	83019	4A1	

MODEL PA–10 PARTS LIST AND DESCRIPTIONS

TUBES

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ITEM No.	USE	TYPE
V10	Channel 2 AF Amp.	12AU7A
V11	Channel 2 Output	6AQ5A
V12	Rectifier	6X4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Packard Bell PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C45A	■40	350	24092	AFH4-52	D0430	FP419.3	TMQ-4241	TVL-4621.6	
B	▲40	350							
C	▲20	350							
D	25	25							
C46	5	25NP	24146	PRS7405	BBR4-150	TCN504		*TVANS-1303.1	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C47	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C48	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C49	1500 10%		DI-1500	DD-152	PM6D15	CCD-152	GP215	10TS-D15

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard Bell PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS–IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R40A B	500K Shaft	½	25047A	BPL-60 Not Req.	C47S-500K-Z KSS-3	(B13-133) * SK7	PP55A Not Req.	Remote Volume, Power On-Off

* Alternate replacement-PPQ13-133 (SK7).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

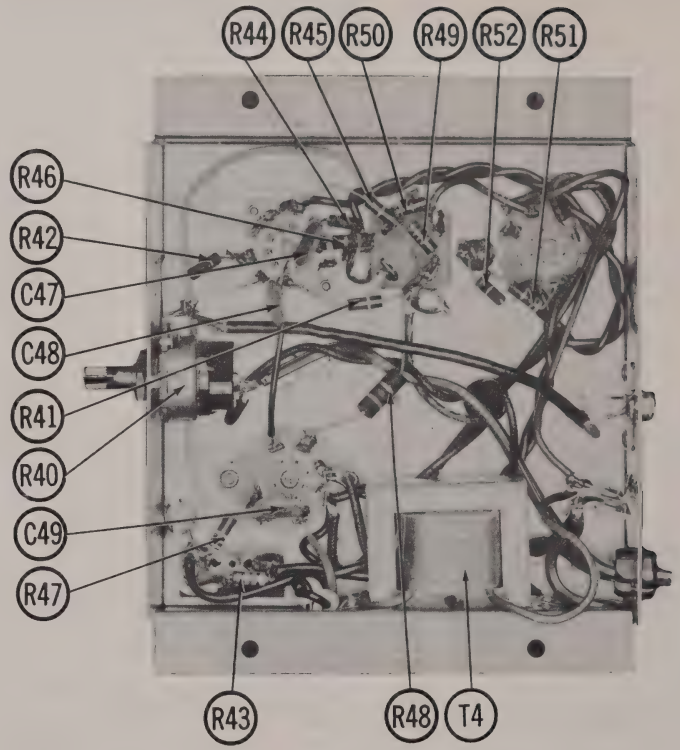
ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R41	220K			
R42	2200Ω			
R43	27K			
R44	1meg			
R45	220K			
R46	2700Ω			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R47	470K			
R48	270Ω 1W			
R49	33K			
R50	5600Ω			
R51	68Ω			
R52	68Ω			

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA Packard Bell PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T3	117V@ .32A	540VCT @ .050A DC	6.3V@ 1.5A	89081		PC-8403①			①Tape 5V and CT on 6.3V windings. Drill new mounting holes.

MODEL PA–10 CHASSIS



TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA Packard Bell PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T4	4000Ω	3-4Ω	89436F	A-2930	A-3877	24S05	S-4IX	

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA Packard Bell PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP3	6"x 9"	PM	3-4Ω	83112B	69A3	
SP4	4"	PM	3-4Ω	83019	4A1	

PHOTOFACT® Folder with CIRCUITRACE®

PETITE MODEL NTR-120

PETITE MODEL NTR-120

PETITE MODEL NTR-120

TRADE NAME	Petite Model NTR-120
IMPORTER	Sterling Hi-Fidelity, Inc., 22-14 40th Ave., Long Island City 1, N. Y.
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	9 Volts DC
RATING	9MA @ 9 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	532 – 1605KC
	15MA @ 9 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1, A2, A3.... GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538
A4, A6..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528
A5..... GENERAL CEMENT #5000, 5003, 5066, 8271, 8272, 8276, 8277, 8290, 8609, 8722, 9150, 9298
WALSCO #2515, 2516, 2518, 2519, 2525, 2541

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1600KC	1600KC	"	A4	"
3.	"	600KC	600KC	"	A5	"
4.	"	1400KC	1400KC Signal.	"	A6	Adjust for maximum output. Repeat Steps 2, 3 and 4.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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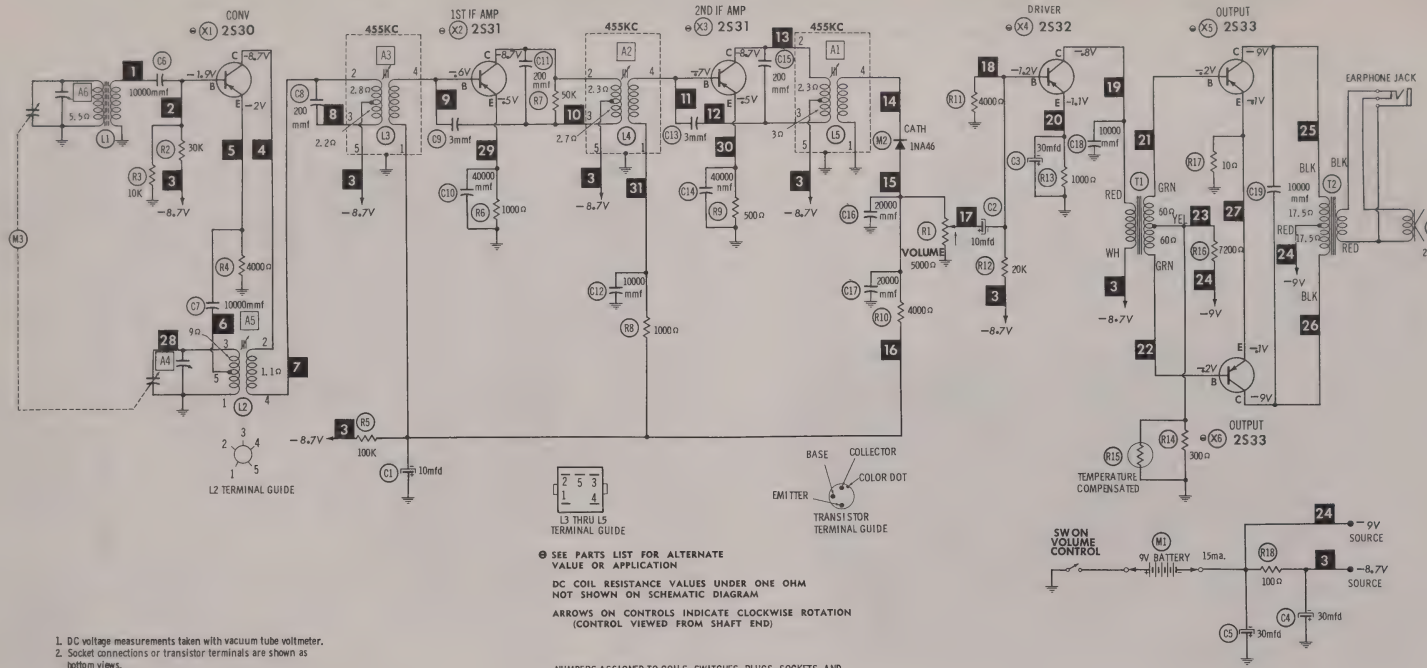
KF442

SET 527 FOLDER 9



⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE®

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PETITE MODEL NTR-120

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2S30	Converter	2N412	2N986		PNP
	2N216*	Converter				
X2	2S31	1st IF Amplifier	2N410	2N483		PNP
	2N218*	1st IF Amplifier				
X3	2S31	2nd IF Amplifier	2N410	2N483		PNP
	2N218*	2nd IF Amplifier				
X4	2SB32	Driver	2N406	2N363		PNP
	2N215*	Driver				
X5	2SB33	Output	2N408	2N632		PNP
	2S33*	Output				
	2N217*	Output				
X6	2SB33	Output	2N408	2N632		PNP
	2S33*	Output				
	2N217*	Output				

* Alternate Type.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	PETITE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	10	3		PTT-3010	NLW10-6	TT3X10	MLV10-3	TE-1053	
C2	10	6		PTT-6010	NLW10-6	TT6X10	MLV10-6	TE-1087	
C3	30	6		PTT-6030	NLW30-6	TT6X30	MLV30-6	TE-1092	
C4	30	10		PTT-10030	NLW30-15	TT15X30	MLV35-15	TE-1158	
C5	30	12		PTT-12030	NLW30-15	TT15X30	MLV35-15	TE-1158	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C7	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C8	200		SI 200	D6-201	L10T2	CCD-201	GP320	10TS-T20
C9	3		NPO-DI 3.0	TCZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C10	40000							
C11	200		SI 200	D6-201	L10T2	CCD-201	GP320	10TS-T20
C12	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C13	3		NPO-DI 3.0	TCZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C14	40000							
C15	200		SI 200	D6-201	L10T2	CCD-201	GP320	10TS-T20
C16	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C17	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C18	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C19	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	PETITE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/10						Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		REMARKS
		IRC PART No.	WORKMAN TV PART No.	
R2	30K			
R3	10K			
R4	4000Ω			
R5	100K			
R6	1000Ω			
R7	50K			
R8	1000Ω			
R9	500Ω			
R10	4000Ω			

ITEM No.	RATING	REPLACEMENT DATA		REMARKS
		IRC PART No.	WORKMAN TV PART No.	
R11	4000Ω			
R12	20K			
R13	1000Ω			
R14	300Ω			
R15	Temp. Comp.			
R16	7200Ω			
R17	10Ω			
R18	100Ω			

PRINTED BOARD

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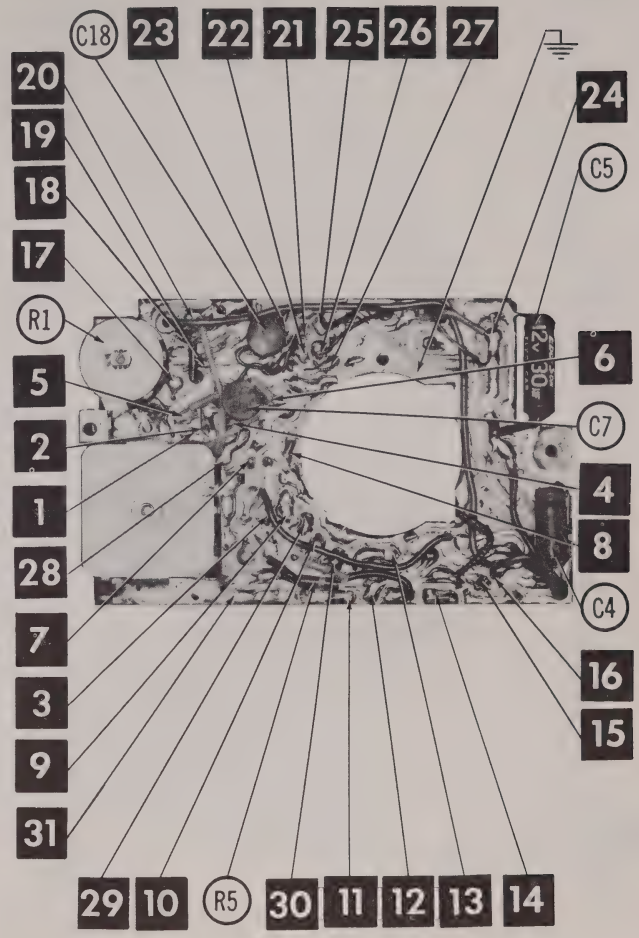


PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		PETITE PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick					
L2	Osc.					
L3	1st IF					
L4	2nd IF					
L5	3rd IF					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	PETITE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.6	1						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	PETITE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	500Ω CT	6-8Ω						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	PETITE PART No.	QUAM PART No.	
SP1	2 1/4"	PM	6-8Ω		22A06Z8	

BATTERIES

ITEM No.	VOLTAGE	PETITE PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V			2U6		216		M-1604	

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		PETITE PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1NA46			1N60	1N60	Detector (Pigtail)

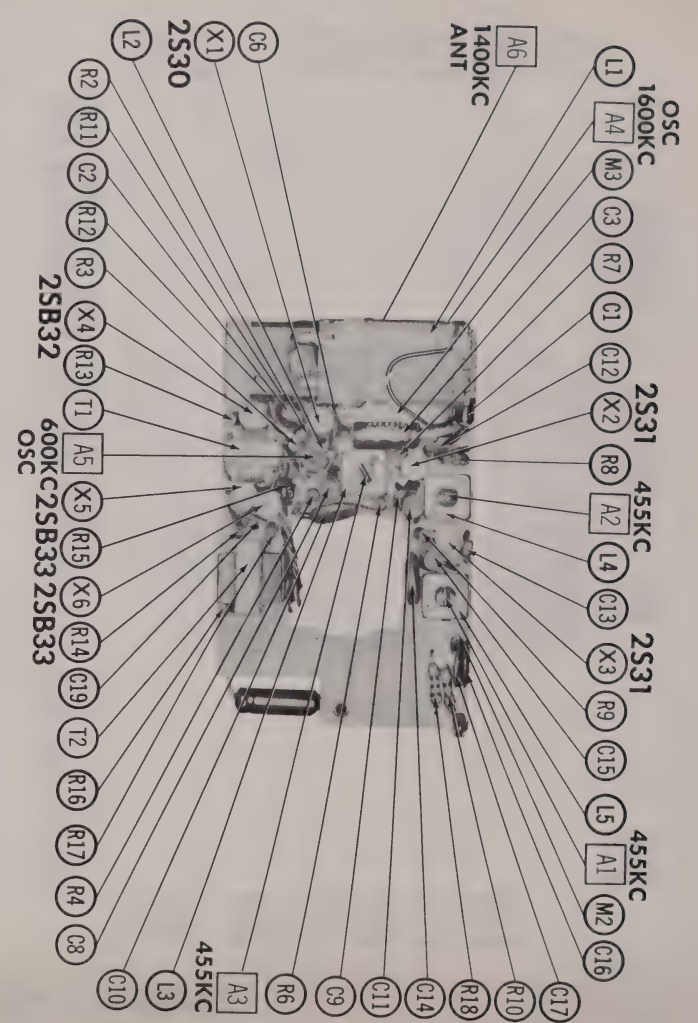
MISCELLANEOUS

ITEM No.	PART NAME	PETITE PART No.	NOTES
M3	Tuning Cap.		2 Gang

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW



PHOTOFACT® Folder

RAULAND MODELS HF1530, HF1531

RAULAND MODELS
HF1530, HF1531

MODEL HF1530

RAULAND MODELS
HF1530, HF1531

TRADE NAME	Rauland Models HF1530, HF1531
MANUFACTURER	Rauland-Borg Corp., 3535 W. Addison Street, Chicago 18, Illinois
TYPE SET	AC Operated 10 Tube Stereo Amplifier
POWER SUPPLY	110 — 120 Volts AC, 60 Cycles RATING 100 Watts, .9 Amp. @ 117 Volts AC, 60 Cycles

SET 527 FOLDER 10

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of KV351

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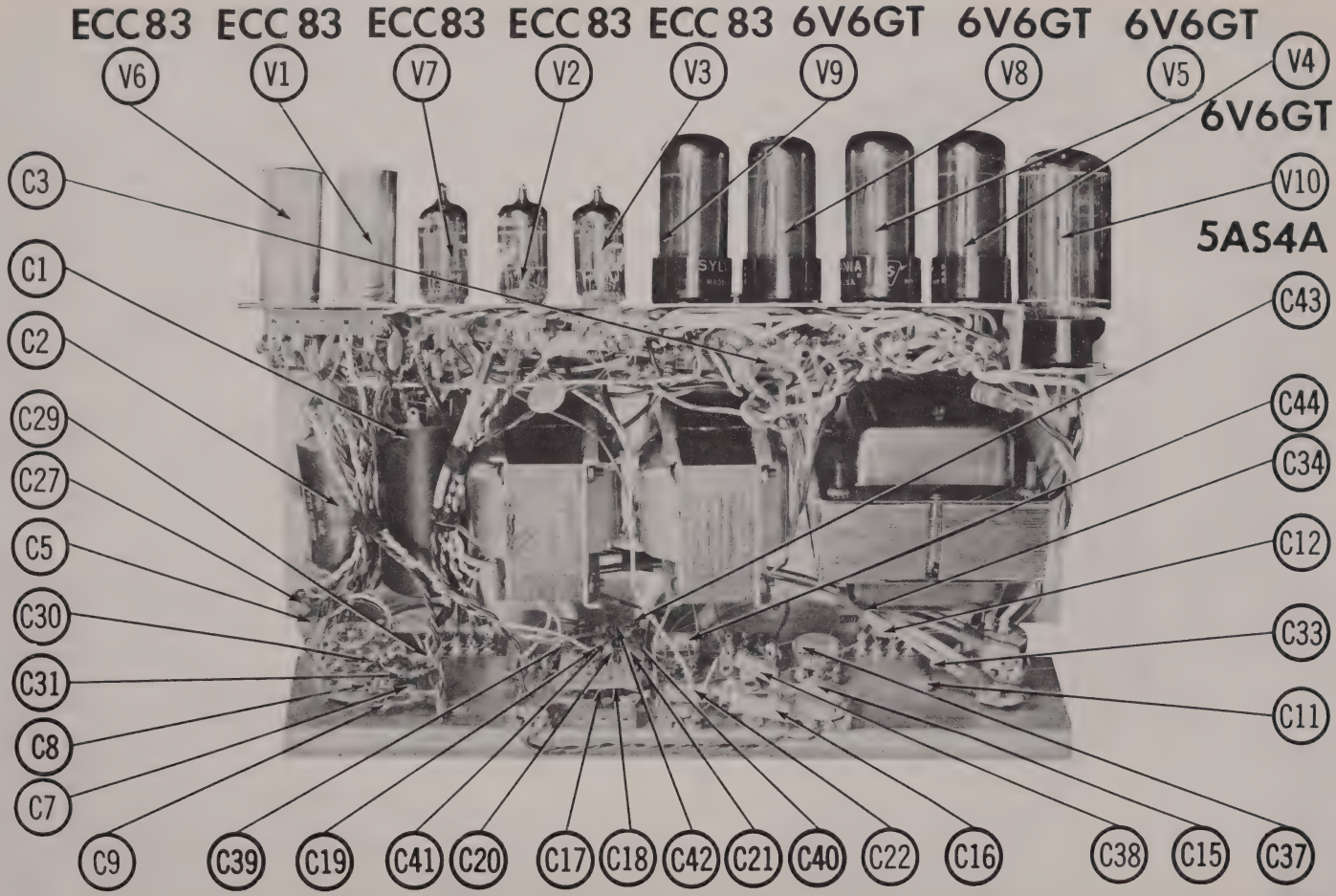
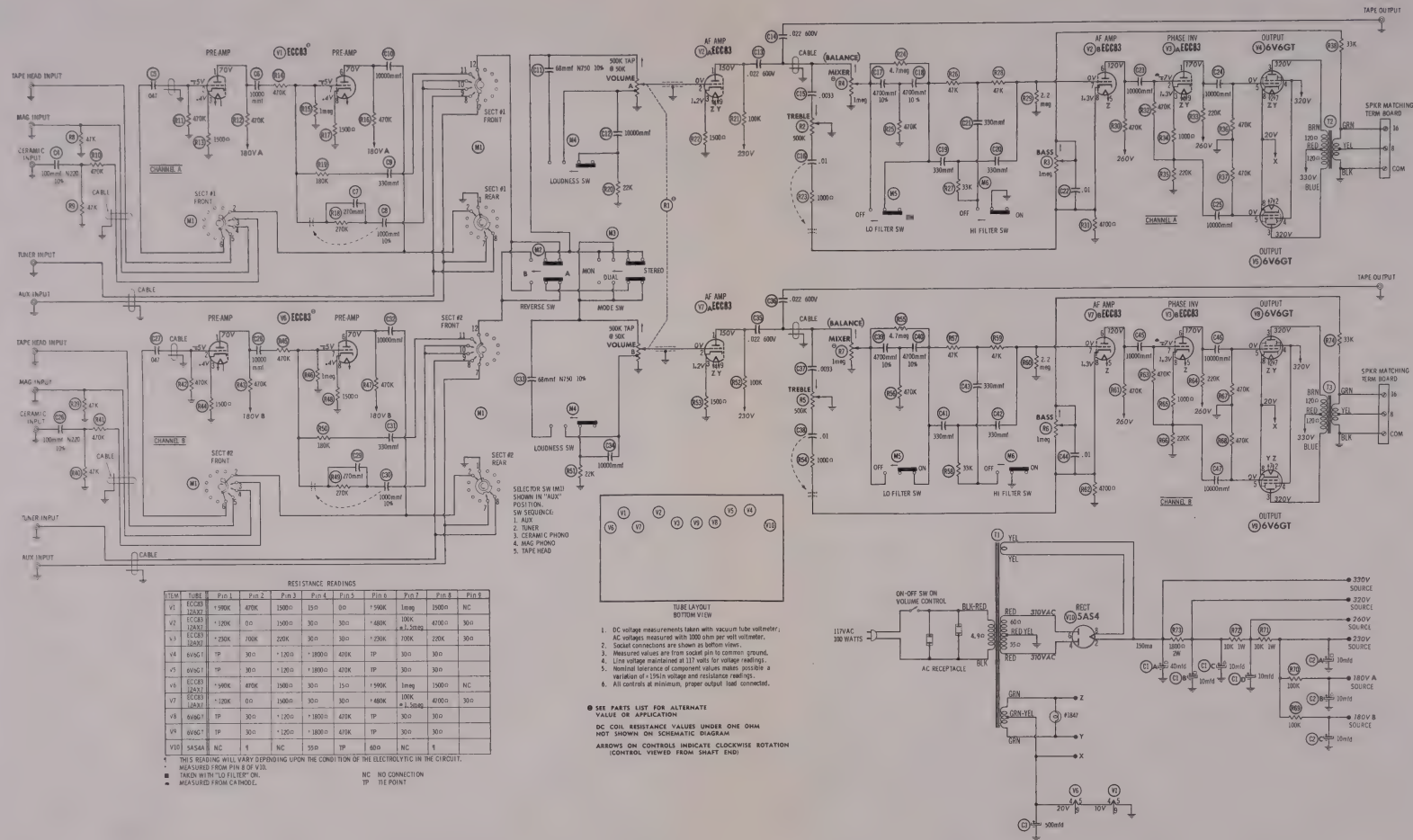


CHASSIS BOTTOM VIEW-CAPACITOR & TUBE IDENT. (CONTROL PANEL VIEW)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC83 12AX7	*590K	470K	1500Ω	15Ω	0Ω	*590K	1meg	1500Ω	NC
V2	ECC83 12AX7	*120K	0Ω	1500Ω	30Ω	30Ω	*480K	100K ±1.5meg	4700Ω	30Ω
V3	ECC83 12AX7	*230K	700K	220K	30Ω	30Ω	*230K	700K	220K	30Ω
V4	6V6GT	TP	30Ω	*120Ω	*1800Ω	470K	TP	30Ω	30Ω	
V5	6V6GT	TP	30Ω	*120Ω	*1800Ω	470K	TP	30Ω	30Ω	
V6	ECC83 12AX7	*590K	470K	1500Ω	30Ω	15Ω	*590K	1meg	1500Ω	NC
V7	ECC83 12AX7	*120K	0Ω	1500Ω	30Ω	30Ω	*480K	100K ±1.5meg	4700Ω	30Ω
V8	6V6GT	TP	30Ω	*120Ω	*1800Ω	470K	TP	30Ω	30Ω	
V9	6V6GT	TP	30Ω	*120Ω	*1800Ω	470K	TP	30Ω	30Ω	
V10	5AS4A	NC	¶	NC	55Ω	TP	60Ω	NC	¶	

* THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
• MEASURED FROM PIN 8 OF V10.
■ TAKEN WITH "LO FILTER" ON.
▲ MEASURED FROM CATHODE.
NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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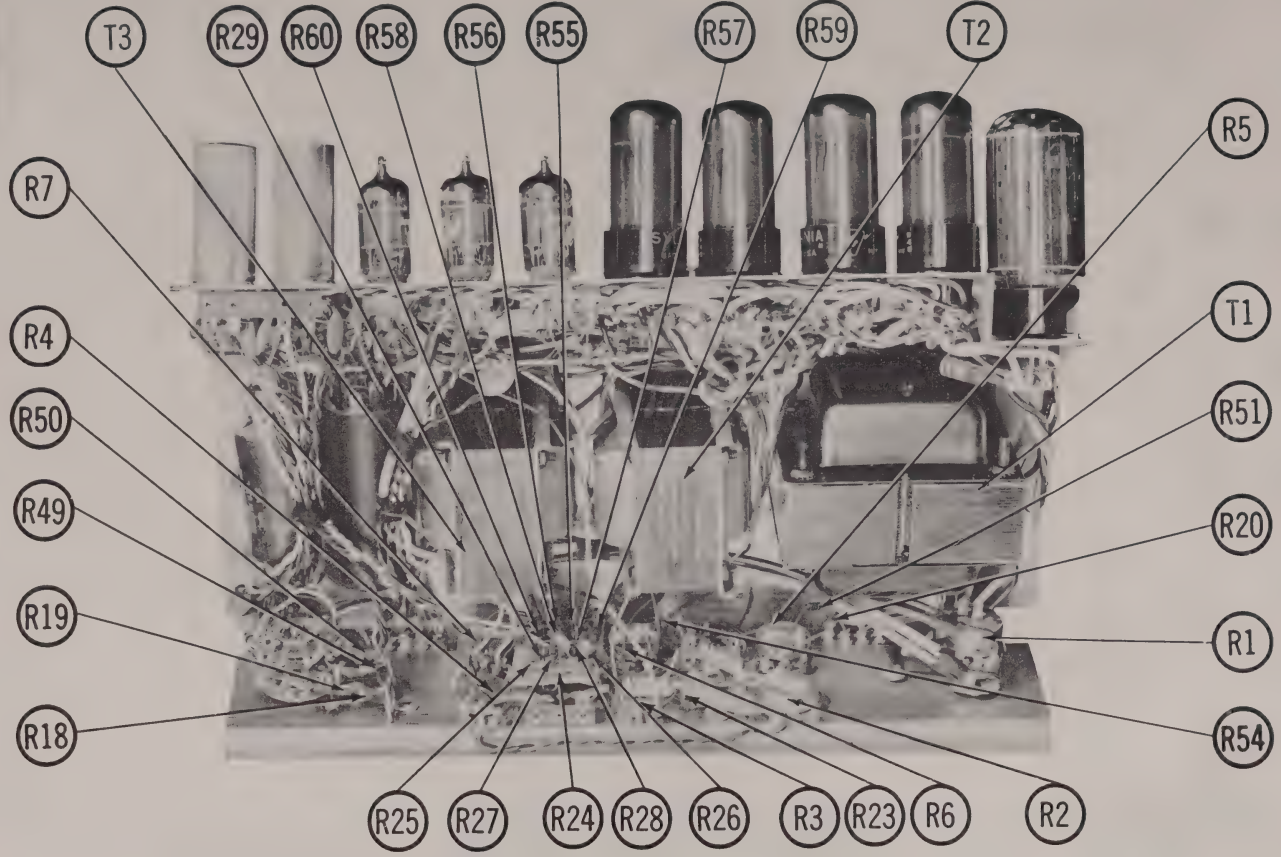
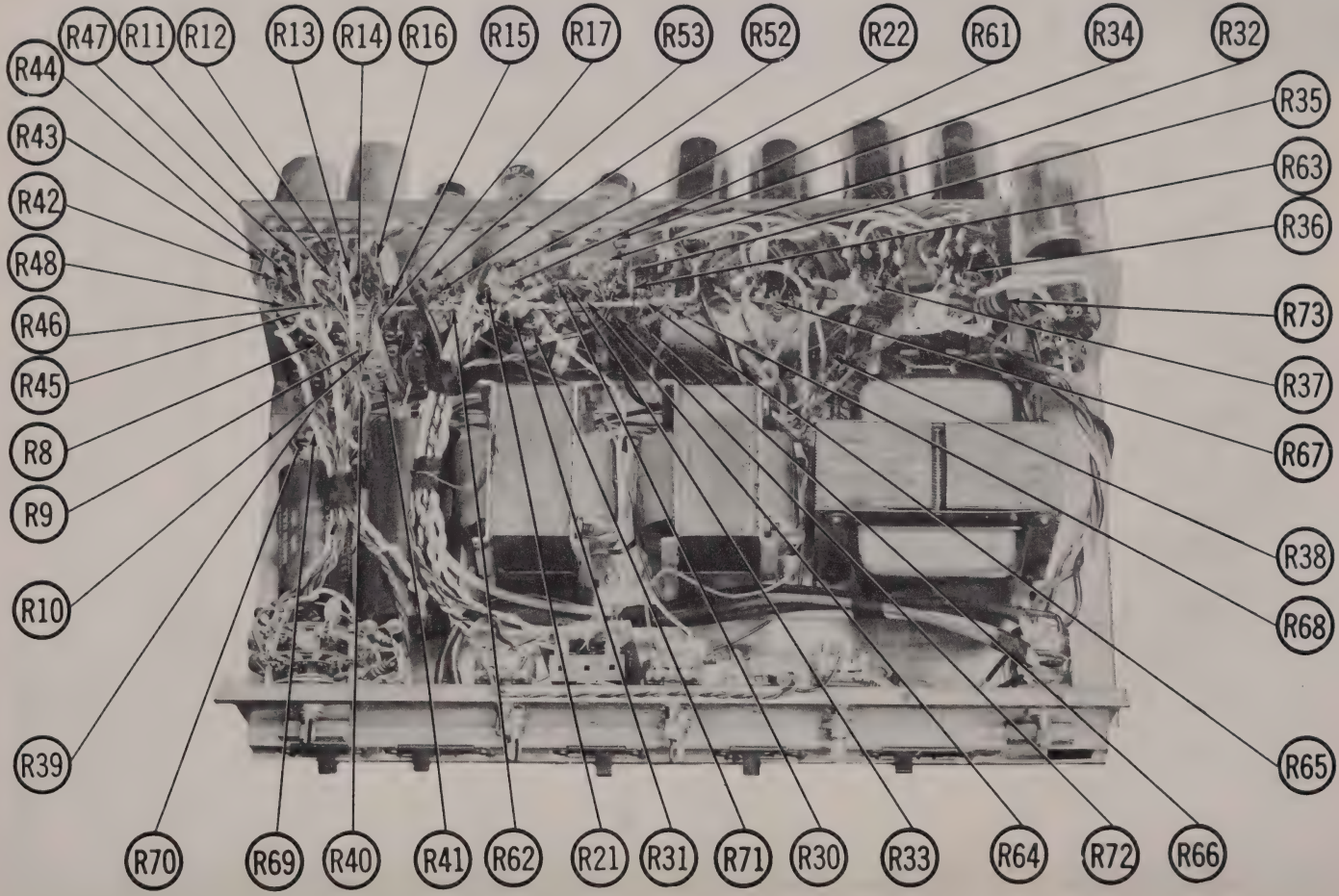
RAULAND MODELS HF1530, HF1531



CHASSIS BOTTOM VIEW-RESISTOR & TRANSFORMER IDENT. (CONTROL PANEL VIEW)



CHASSIS BOTTOM VIEW-RESITOR IDENT. (TUBE SOCKET VIEW)

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (GENERAL ELECTRIC • RAYTHEON • SYLVANIA)
V1	Channel A Preamp.	ECC83/12AX7 (7025)*
V2	Channel A AF Amp.	ECC83/12AX7
V3	Channel A Phase Inv. - Channel B Phase Inv.	ECC83/12AX7
V4	Channel A Output	6V6GT
V5	Channel A Output	6V6GT
V6	Channel B Preamp.	ECC83/12AX7(7025)*
V7	Channel B AF Amp.	ECC83/12AX7
V8	Channel B Output	6V6GT
V9	Channel B Output	6V6GT
V10	Rectifier	5AS4A

ELECTROLYTIC CAPACITORS

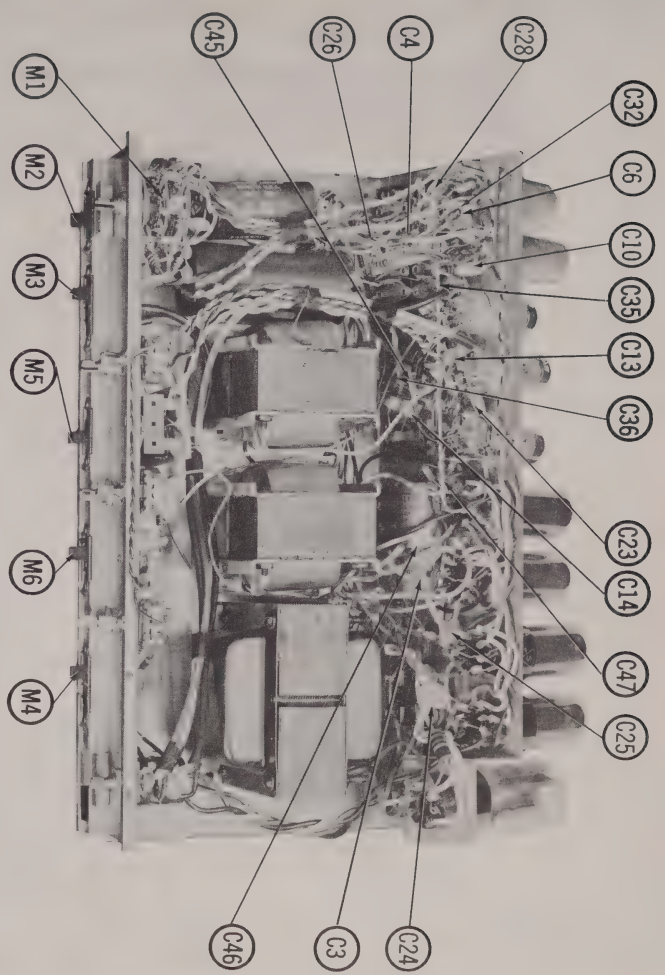
ITEM No.	RATING CAP.	RATING VOLT.	RAULAND PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	450	CE706A-D	AFH4-17	D0160	FP475.5	TMQ-4634	TVL-4771.3	
B	■10	450							
C	▲10	450							
D	10	450							
C2A	■10	300	CE306K	AFH3-22	C0210	FP330.5	TMT-3292	TVL-3580	
B	▲10	300							
C	10	300							
C3	500	25	CE507	PRS1290	BR5002	TC2505	TD-500-25	TVA-1209	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	EMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	100 N220 10%					*		10TCR-T10
C5	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C7	270		DI-270	DD-271	L10T27	CCD-271	GP327	10TS-T27
C8	1000 10%		DI-1000	DD-102		CCD-102	GP210	10TS-D10
C9	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C10	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C11	68 N750 DI 68		N750-DI 68	DTN-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C12	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C13	.022 600V		P688N-022	DD-203	CUB6S22	6DP-2-223	GEM-6122	6TM-S22
C14	.022 600V		P688N-022	DD-203	CUB6S22	6DP-2-223	GEM-6122	6TM-S22
C15	.0033 200V		P288N-0033	D6-332	CUB6D33	6DP-1-332	GEM-6233	6TM-D33
C16	.01 200V		P288N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C17	4700 10%		DI-4700			CCD-472	JL-247	10TS-D47
C18	4700 10%		DI-4700			CCD-472	JL-247	10TS-D47
C19	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C20	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C21	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C22	.01 200V		P288N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C23	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C24	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C25	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C26	100 N220 10%					*		10TCR-T10
C27	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C28	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C29	270		DI-270	DD-271	L10T27	CCD-271	GP327	10TS-T27
C30	1000 10%		DI-1000	DD-102		CCD-102	GP210	10TS-D10
C31	330		DI-330	DD-331	L10T33	CCD-331	GP330	10TS-D33
C32	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C33	68 N750 10%		N750-DI 68	DTN-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C34	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C35	.022 600V		P688N-022	DD-203	CUB6S22	6DP-2-223	GEM-6122	6TM-S22
C36	.022 600V		P688N-022	DD-203	CUB6S22	6DP-2-223	GEM-6122	6TM-S22
C37	.0033 200V		P288N-0033	D6-332	CUB6D33	6DP-1-332	GEM-6233	6TM-D33
C38	.01 200V		P288N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C39	4700 10%		DI-4700			CCD-472	JL-247	10TS-D47
C40	4700 10%		DI-4700			CCD-472	JL-247	10TS-D47
C41	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C42	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C43	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C44	.01 200V		P288N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C45	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C46	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C47	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

HF 1530 CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RAULAND PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	500K		RP105AQ ①				FA55T54	Volume, Channel A
	50K Tap							
B	500K						RU55T54	Volume, Channel B
	50K Tap							
C	Shaft						CS3500	
D	Switch						US4i	Power Off-On
R2	500K		RP504AP	B-61		Q17-133		Treble, Channel A
R3A	1meg		RP105AD	B-70	A47-1meg-Z	Q13-137	U53	Bass, Channel A
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R4A	1meg		RP105AD ②	B-70	A47-1meg-Z	Q13-137	U53	Mixer (Balance), Channel A
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R5	500K		RP504AP	B-61		Q17-133		Treble, Channel B
R6A	1meg		RP105AD	B-70	A47-1meg-Z	Q13-137	U53	Bass, Channel B
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R7A	1meg		RP105AD ②	B-70	A47-1meg-Z	Q13-137	U53	Mixer (Balance), Channel B
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

① Some versions may use Part #RP105AH.
② Some versions may use Part #RP105AE-D.

HF 1531 CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RAULAND PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	500K *		RP105AH					Volume, Channel A
B	500K *							Volume, Channel B
C	Switch							Power Off-On
R2A	500K		RP105AM	B-613				Treble, Channel A
B	500K			SR-613				Treble, Channel B
R3A	1meg		RP205G	B-70	AD47-1meg-Z		FA16A	Bass, Channel A
B	1meg			SR-70	Not Req.		RU16A	Bass, Channel B
C	Shaft			Not Req.	KSS-3		CS3500	
R4A	500K		RP105AN	B-60				Balance, Channel A
B	500K			SR-613				Balance, Channel B

* Taps ⓐ 50K & 300K.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R8	47K				R20	22K			
R9	47K				R21	100K			
R10	470K				R22	1500Ω			
R11	470K				R23	1000Ω			
R12	470K				R24	4.7meg			
R13	1500Ω				R25	470K			
R14	470K				R26	47K			
R15	1meg				R27	33K			
R16	470K				R28	47K			
R17	1500Ω				R29	2.2meg			
R18	270K				R30	470K			
R19	180K				R31	4700Ω			

RESISTORS (cont)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R32	470K				R54	1000Ω			
R33	220K				R55	4.7meg			
R34	1000Ω				R56	470K			
R35	220K				R57	47K			
R36	470K				R58	33K			
R37	470K				R59	47K			
R38	33K				R60	2.2meg			
R39	47K				R61	470K			
R40	47K				R62	4700Ω			
R41	470K				R63	470K			
R42	470K				R64	220K			
R43	470K				R65	1000Ω			
R44	1500Ω				R66	220K			
R45	470K				R67	470K			
R46	1meg				R68	470K			
R47	470K				R69	100K			
R48	1500Ω				R70	100K			
R49	270K				R71	10K 1W			
R50	180K				R72	10K 1W			
R51	22K				R73	1800Ω 2W			
R52	100K				R74	33K			
R53	1500Ω								

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	RAULAND PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V ⓐ .9A	620VCT ⓐ .150A DC	5V ⓐ 3A	LP-0282					
	SEC. 3	SEC. 4	SEC. 5						
	6.3VCT ⓐ 2.8A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	RAULAND PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	2400Ω CT	16Ω Tap ⓐ 8Ω	LO-0162					
T3	2400Ω CT	16Ω Tap ⓐ 8Ω	LO-0162					

MISCELLANEOUS

ITEM No.	PART NAME	RAULAND PART No.	NOTES
M1	Switch	X-0380	Selector (Rotary Wafer Type)
M2	Switch		Reverse (DPDT Slide Type)
M3	Switch		Mode (TPTT Slide Type)
M4	Switch		Loudness (TPTT Slide Type)
M5	Switch		Lo Filter (DPDT Slide Type) (Rumble)
M6	Switch		Hi Filter (DPDT Slide Type) (Scratch)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (8 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder

SILVERTONE MODELS 1265, 1277, 1278, 1279 (Ch. 528.59820, 528.59830)

SILVERTONE MODELS 1265, 1277, 1278, 1279 (Ch. 528.59820, 528.59830)

MODEL 1277

SILVERTONE MODELS 1265, 1277, 1278, 1279 (Ch. 528.59820, 528.59830)

TRADE NAME	Silvertone Models 1265 (Ch. 528.59820), 1277, 1278, 1279 (Ch. 528.59830)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Illinois
TYPE SET	AC Operated 4 Tube Stereo Phono Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110 – 120 Volts AC, 60 Cycles RATING 48 Watts, .46 Amp. @ 117 Volts AC (Less Motor)

MODEL 1265 USES RECORD CHANGER 528.57360 OR 528.57361. MODELS 1277, 1278 AND 1279 USE RECORD CHANGER 528.56740 OR 528.56741. FOR SERVICE INFORMATION – SEE PHOTOFACT SET 515 FOLDER 16

SET 527 FOLDER 11

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of KT448

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PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC •			• RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel 1 AF Amp. - Channel 2 AF Amp.	12AX7	V3	Channel 2 Output	EL84/6BQ5
V2	Channel 1 Output	EL84/6BQ5	V4	Rectifier	EZ81/6CA4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲50	250	18-61-3	AFH4-53		WP412.8	TMQ-4104	TVLS-3580.7*	
B	■50	250						TVA-1206	
C	▲50	250							
D	50	15							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C3	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C4	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C5A	4000		BPD-2X004	DD-402	BYA10D4	CCD-402	B-240	5HK-2D40
B	4000			DD-402	BYA10D4	CCD-402	B-240	
C6	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C7	150		DI-150	DD-151	L10T15	CCD-151	GP315	10TS-T15
C8	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C9	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C10	150		DI-150	DD-151	L10T15	CCD-151	GP315	10TS-T15
C11	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C12	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SILVERTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2meg		24-414	BT-82				Loudness, Channel 1
	1meg Tap							
B	2meg			STR-82				Loudness, Channel 2
	1meg Tap							
R2A	2meg		24-415				FA26A	Balance, Channel 1
B	2meg						RU26R	Balance, Channel 2
C	Shaft						CS3500	
R3A	1meg		24-417	B-70	AD47-1meg-Z		FA16A	Treble, Channel 1
B	1meg			SR-70	Not Req.		RU16A	Treble, Channel 2
C	Shaft			Not Req.	FS-3		CS3500	
R4A	5meg		24-416	B-87	AD47-5meg-S		FA56L	Bass, Channel 1
B	5meg			SR-87	Not Req.		RU56L	Bass, Channel 2
C	Shaft			Not Req.	FS-3		CS3500	

RESISTORS

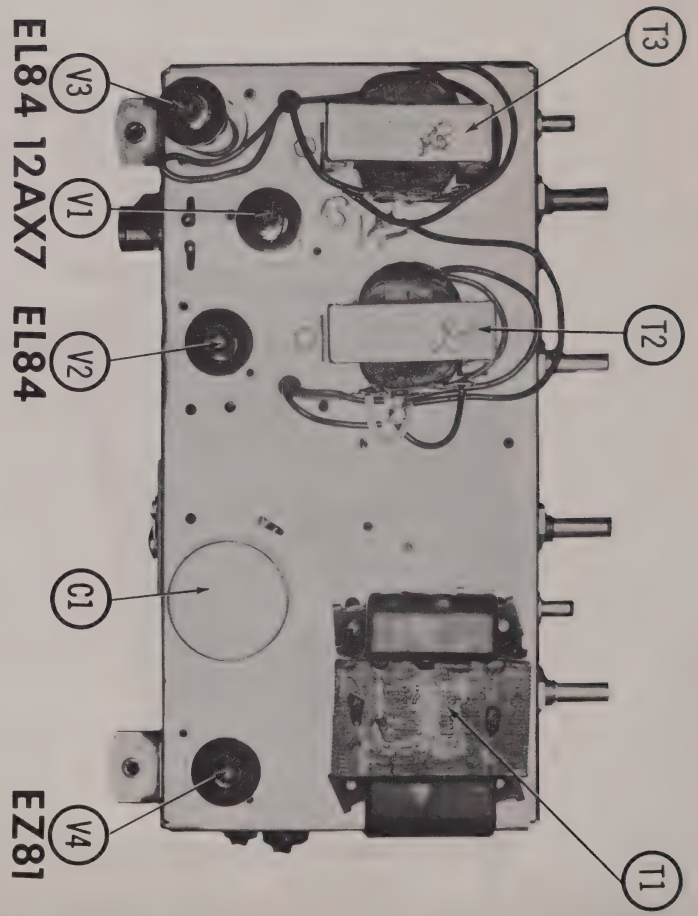
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R5	4.7meg			
R6	270K			
R7	270Ω			
R8	15K			
R9	10K			Note 1
R10	470K			
R11	82Ω 1W			
R12	4.7meg			
R13	270K			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R14	270Ω			
R15	15K			
R16	10K			Note 1
R17	470K			
R18	2200Ω 1W			
R19	82Ω 1W			
R20	100Ω			
R21	100Ω			

Note 1. Not used in Chassis 528, 59820.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SILVERTONE PART No.	REPLACEMENT DATA
K1	Loudness Compensation	(2) 33mmf, (2) 5000mmf, (2) 68K	13-47-3	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	SILVERTONE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V@ .46A	400VCT @ .070A DC	6.3V@ 2.7A	80-44-0					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	SILVERTONE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5100Ω	6-8Ω	80-124-1	A-2902	A-3337	24S64	S-54X	
T3	5100Ω	6-8Ω	80-124-1	A-2902	A-3337	24S64	S-54X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SILVERTONE PART No.	QUAM PART No.	
SP1	6"x 9"	PM	6-8Ω	33-479-4B*	69A3Z6.4	* Models 1277, 1278, 1279 (Alternate Part #33-479-4)
SP2	6"x 9"	PM	6-8Ω	33-479-4B*	69A3Z6.4	♦ Used in Model 1265
	6"x 9"	PM	6-8Ω	33-461-4 ♦		
	5½"	PM		33-460-4 ♦		

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA								NOTES
	SILVERTONE PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		SONOTONE PART No.		
	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	
M1	33-311-0	83-1252* (LP)	13TB	Not Req.	26S	S1-1*	8TA4-S	N-8TA-S *	Models 1277, 1278, 1279
		83-1250* (78RPM)				S3-3 *			
	33-314-0	83-1308*							Model 1265

CABINETS & CABINET PARTS

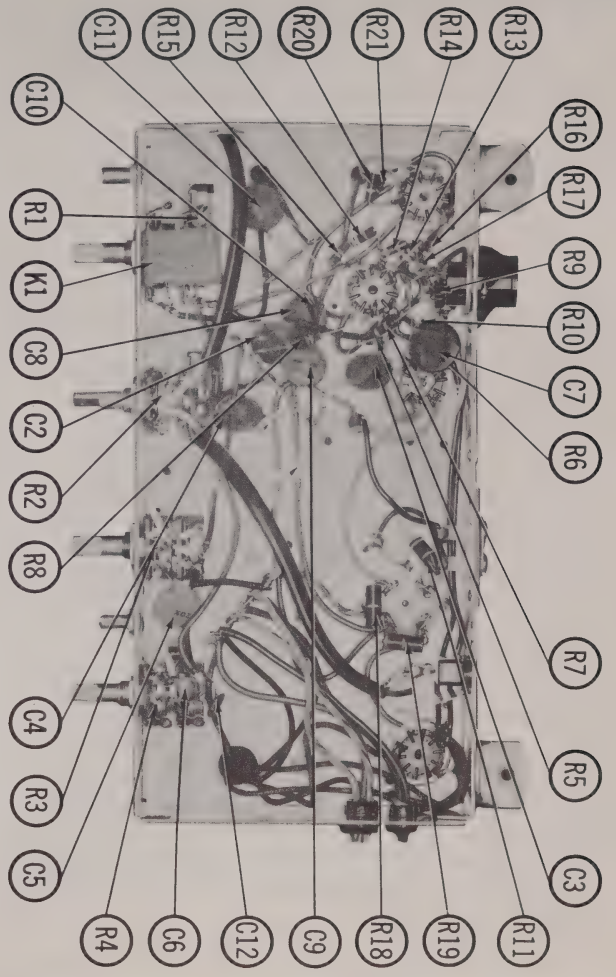
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

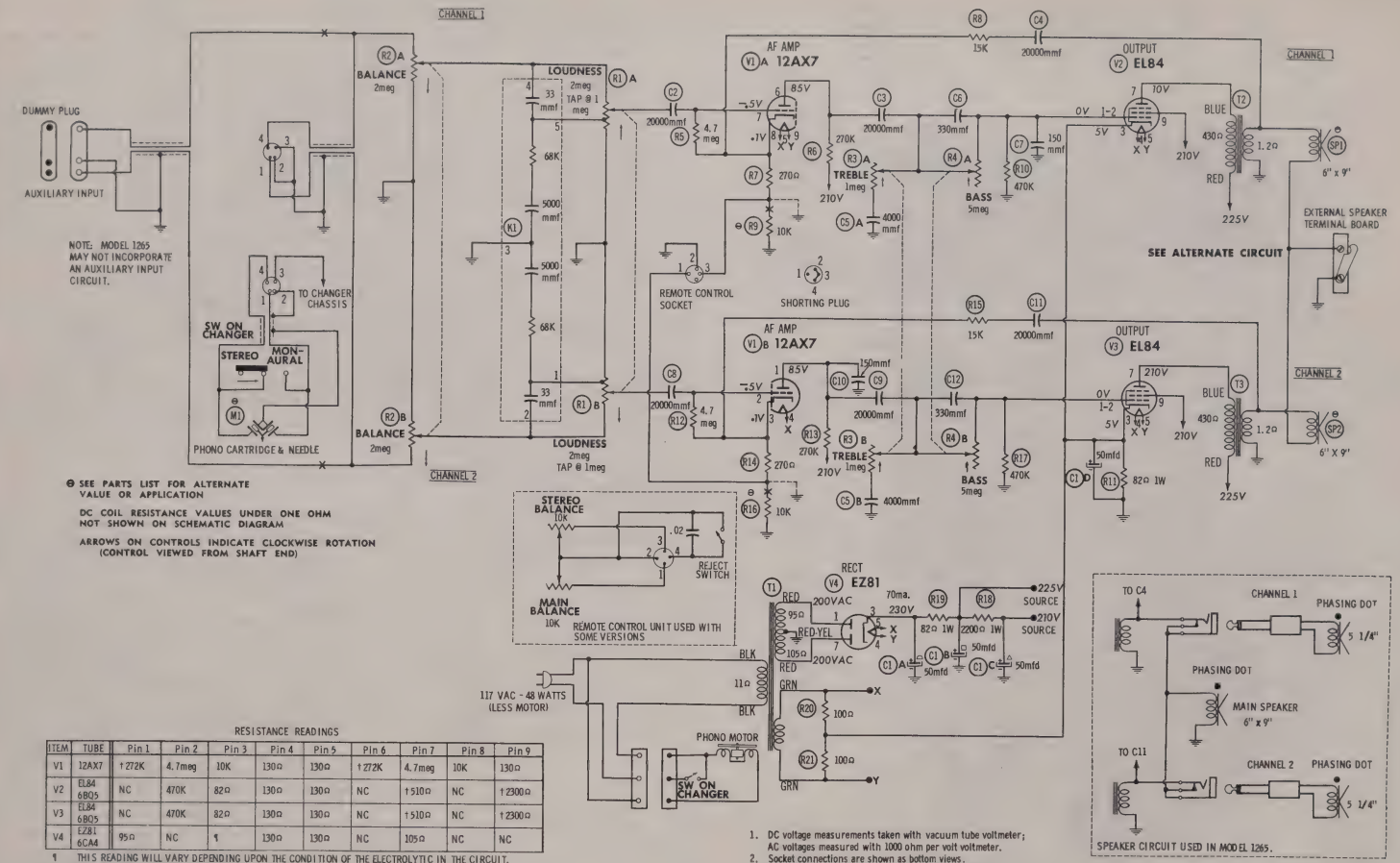
NAME	PART NO.	DESCRIPTION
Knob	52-1390-0	Model 1265
Knob	52-1472-0	Loudness, Model 1277, 1278, 1279
Knob	52-1469-0	Bass, Model 1277, 1278, 1279
Knob	52-1470-0	Treble, Model 1277, 1278, 1279
Knob	52-1471-0	Balance, Model 1277, 1278, 1279
Cabinet	42-130-2	Includes Speaker Cabinets, Model 1265
Cabinet	42-135-2	Mahogany, Model 1277
Cabinet	42-136-2	Limed Oak, Model 1278
Cabinet	42-137-2	Walnut, Model 1279
Cabinet	42-82-4	Speaker, Mahogany, Model 1277
Cabinet	42-83-4	Speaker, Limed Oak, Model 1278
Cabinet	42-84-4	Speaker, Walnut, Model 1279

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)

CHASSIS—BOTTOM VIEW





⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†272K	4.7meg	10K	130Ω	130Ω	†272K	4.7meg	10K	130Ω
V2	EL84 6BQ5	NC	470K	82Ω	130Ω	130Ω	NC	†510Ω	NC	†2300Ω
V3	EL84 6BQ5	NC	470K	82Ω	130Ω	130Ω	NC	†510Ω	NC	†2300Ω
V4	EZ81 6CA4	95Ω	NC	¶	130Ω	130Ω	NC	105Ω	NC	NC

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 3 OF V4. NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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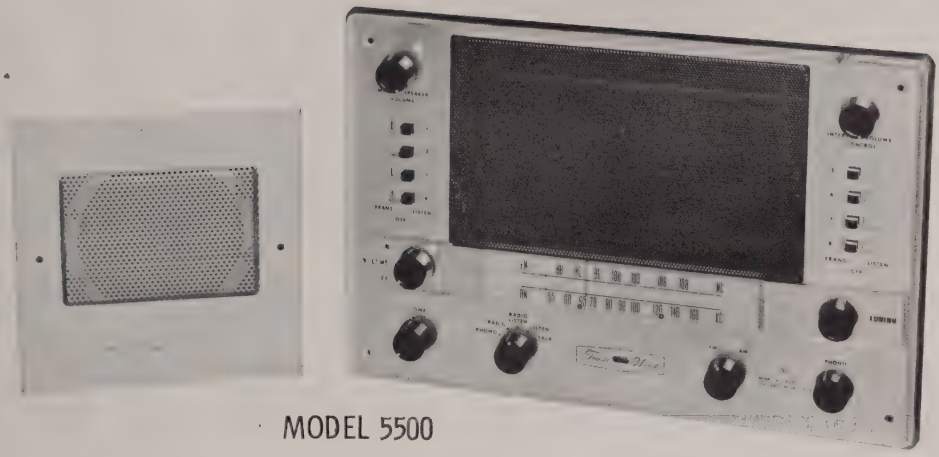
SILVERTONE MODELS 1265, 1277, 1278, 1279 (Ch. 528.59820, 528.59830)

PHOTOFACT Folder

**TRADE-WIND
MODELS 5500, 5600**

TRADE-WIND
MODELS 5500, 5600

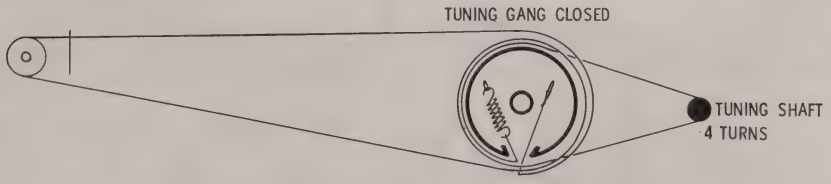


MODEL 5500

TRADE-WIND
MODELS 5500, 5600

TRADE NAME	Trade-Wind Models 5500, 5600		
MANUFACTURER	Trade-Wind Motor Fans, Inc., Div. of Robbins & Myers, Inc., 7755 Paramount Place, Pico Rivera, Calif.		
TYPE SET	AC-DC Operated 7 Tube FM-AM Receiver And Intercom.		
POWER SUPPLY	110 - 120 Volts AC-DC	RATING	34 Watts, .38 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540 — 1600KC	FREQ. MOD.	88 — 108MC

DIAL CORD STRINGING



FRONT VIEW

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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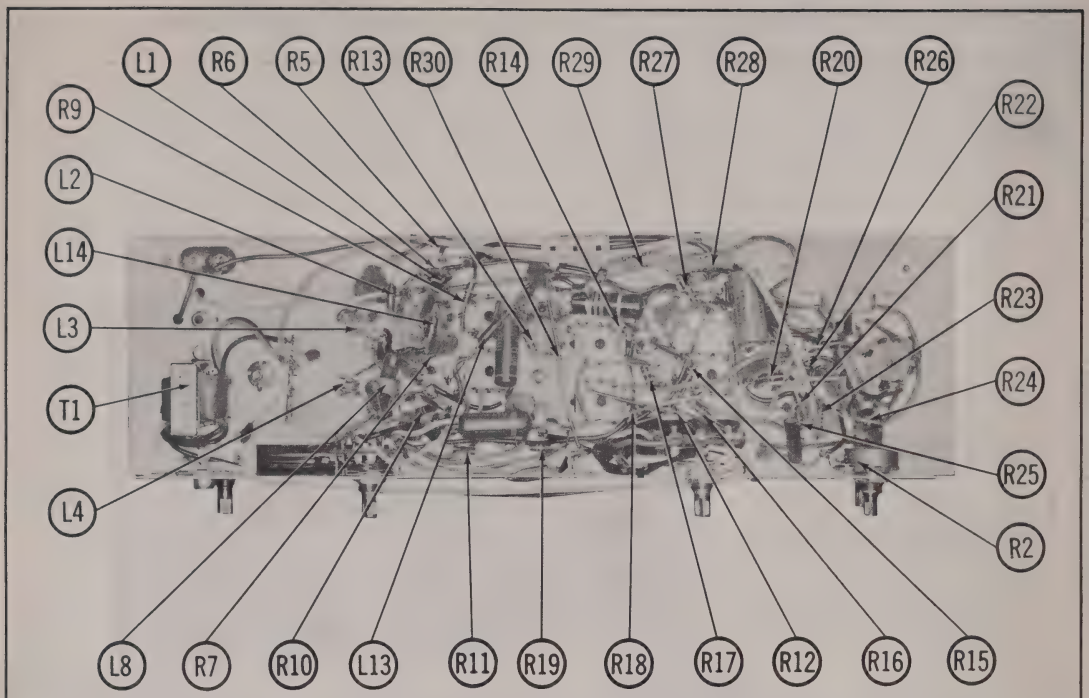
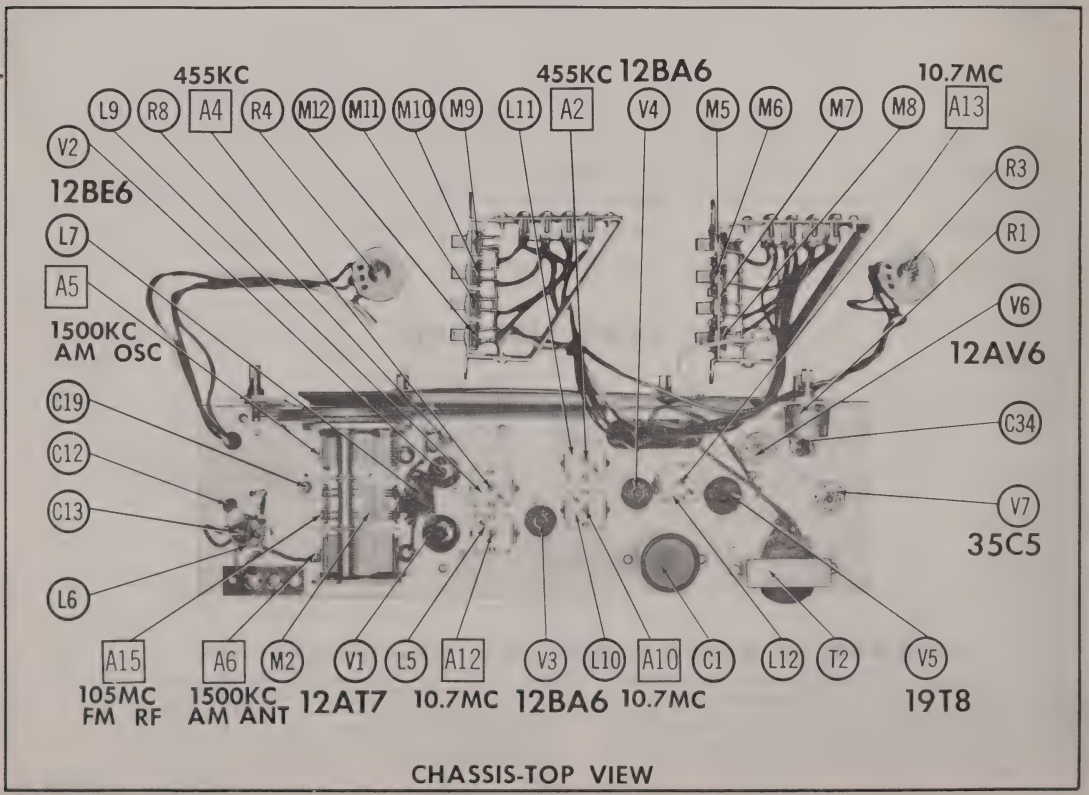


CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CHASSIS-TOP VIEW

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1 Thru A4, A8 Thru A13... GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A6, A14, A15..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A7..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

AM ALIGNMENT—SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 7 (grid) of AM Converter. Low side to chassis.	455KC (400% AM Mod.)	(AM) Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	High side thru .1mfd to AM antenna terminal. Low side to chassis.	1500KC	1500KC Signal.	"	A5, A6	"
3.	"	600KC	600KC Signal.	"	A7	Adjust for maximum output. Repeat Steps 2 and 3.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

Connect two matched 100K (±1%) resistors in series from point (A) to chassis. The junction of these two resistors is alignment point (C) as shown on the schematic.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	High side thru .01mfd to pin 7 (grid) of FM Mixer. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point (A). Common to chassis.	A8, A9, A10, A11, A12	Adjust for maximum deflection.
5.	"	"	"	DC probe to point (B). Common to point (C).	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	High side thru .01mfd to pin 7 (grid) of FM Mixer. Low side to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. to point (A). Low side to chassis.	A8, A9, A10, A11, A12	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
5.	"	"	"	Vert. amp. to point (B). Low side to chassis.	A13	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A8 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	High side thru 270Ω to FM antenna terminal. Low side to chassis.	105MC (Unmod.)	(FM) 105MC Signal	DC probe thru 1meg to point (A) Common to chassis.	A14, A15	Adjust for maximum deflection.
7.	"	92MC	92MC	"	L4	Adjust for maximum deflection.
8.	"	"	"	"	L3	Adjust for maximum deflection. Repeat Steps 6, 7, and 8.

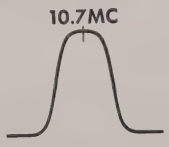


FIG. 1

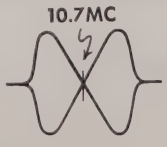
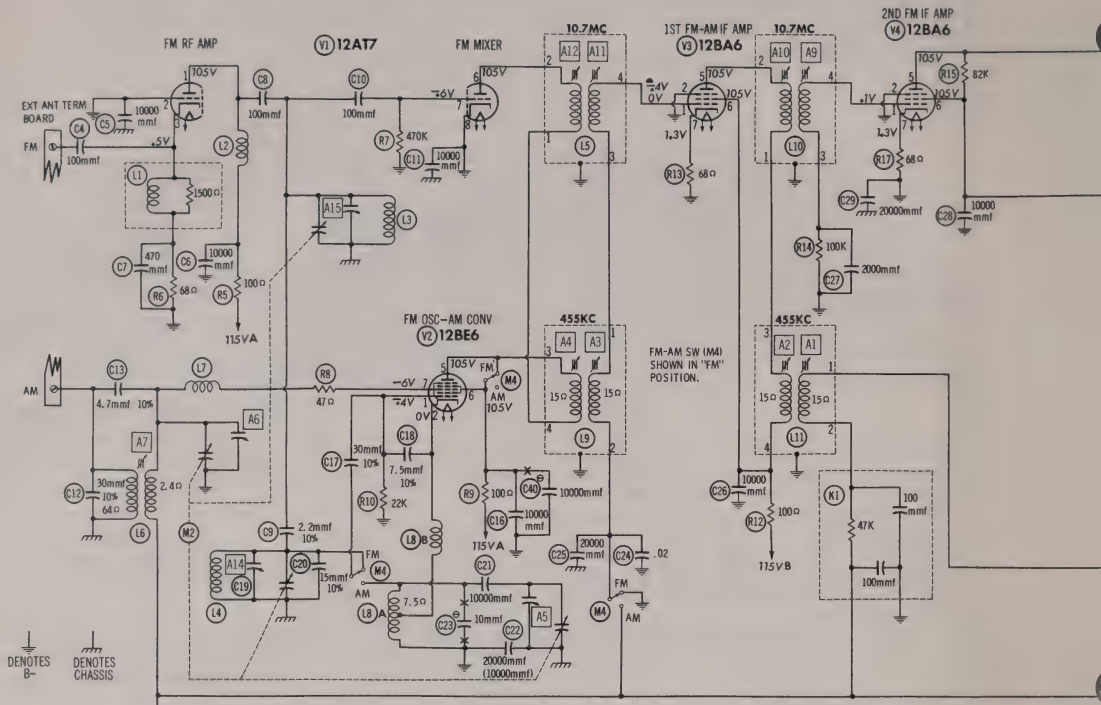
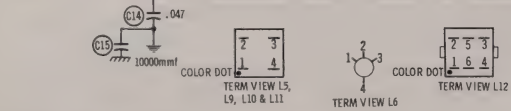
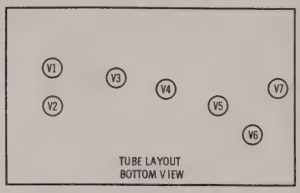


FIG. 2







RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AT7	†365Ω	0Ω	68Ω	45Ω	60Ω	†365Ω	470K	0Ω	NC
V2	12BE6	22K	1Ω	60Ω	75Ω	†365Ω	†365Ω	▬2.7meg		
V3	12BA6	20K ▬2.7meg	0Ω	75Ω	90Ω	†365Ω	†365Ω	68Ω		
V4	12BA6	100K	0Ω	90Ω	105Ω	†365Ω	†365Ω	68Ω		
V5	19T8	520K	22K	520K	30Ω	0Ω	▬550K	0Ω	6.8meg	†500K
V6	12AV6	600Ω	10K	45Ω	30Ω	0Ω	0Ω	†225K		
V7	35C5	180Ω	500K	105Ω	160Ω	NC	†5600Ω	†495Ω		

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
▬ MEASURED IN "AM" POSITION.
† MEASURED FROM OUTPUT OF M1.

NC NO CONNECTION

Ⓔ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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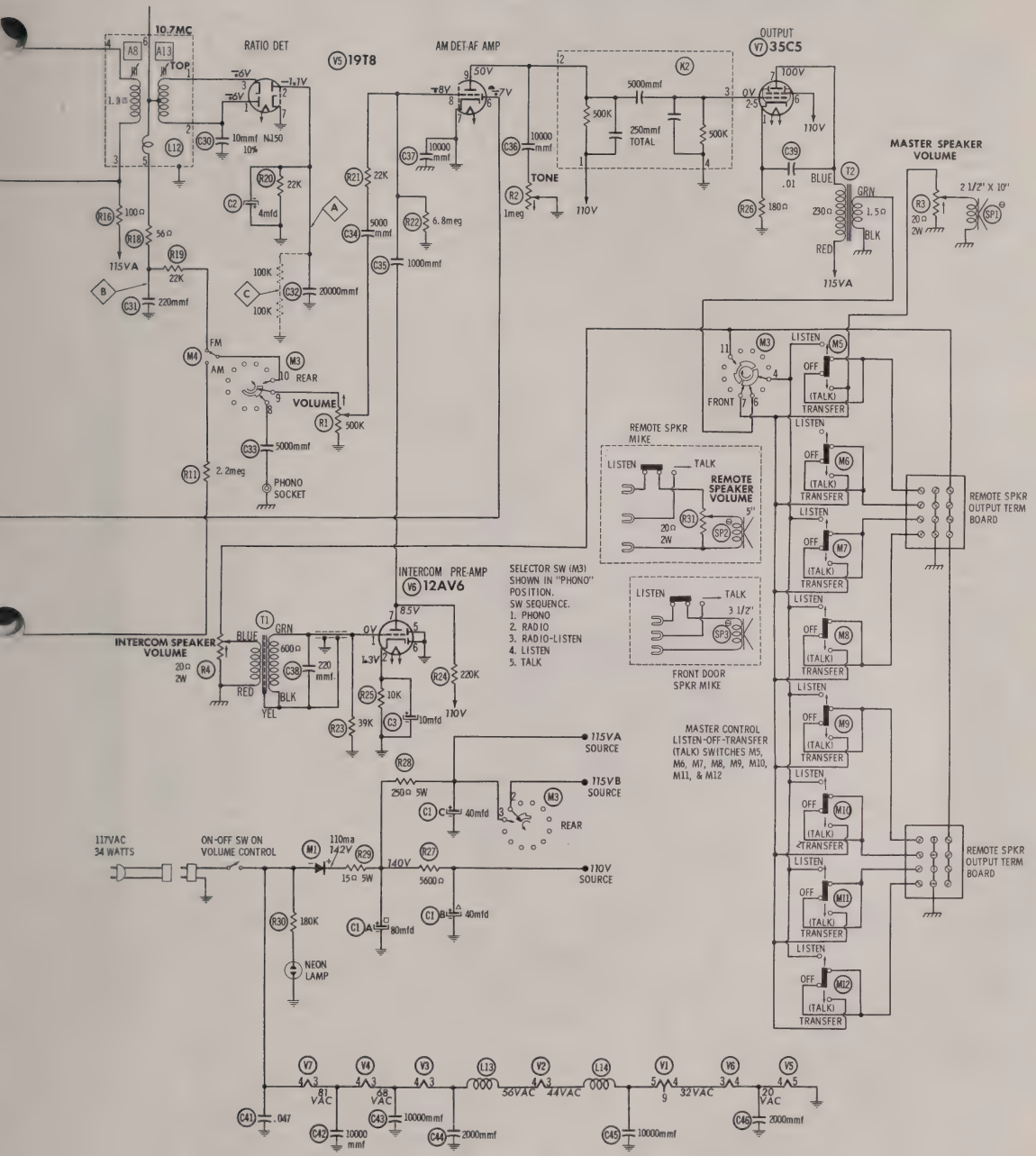
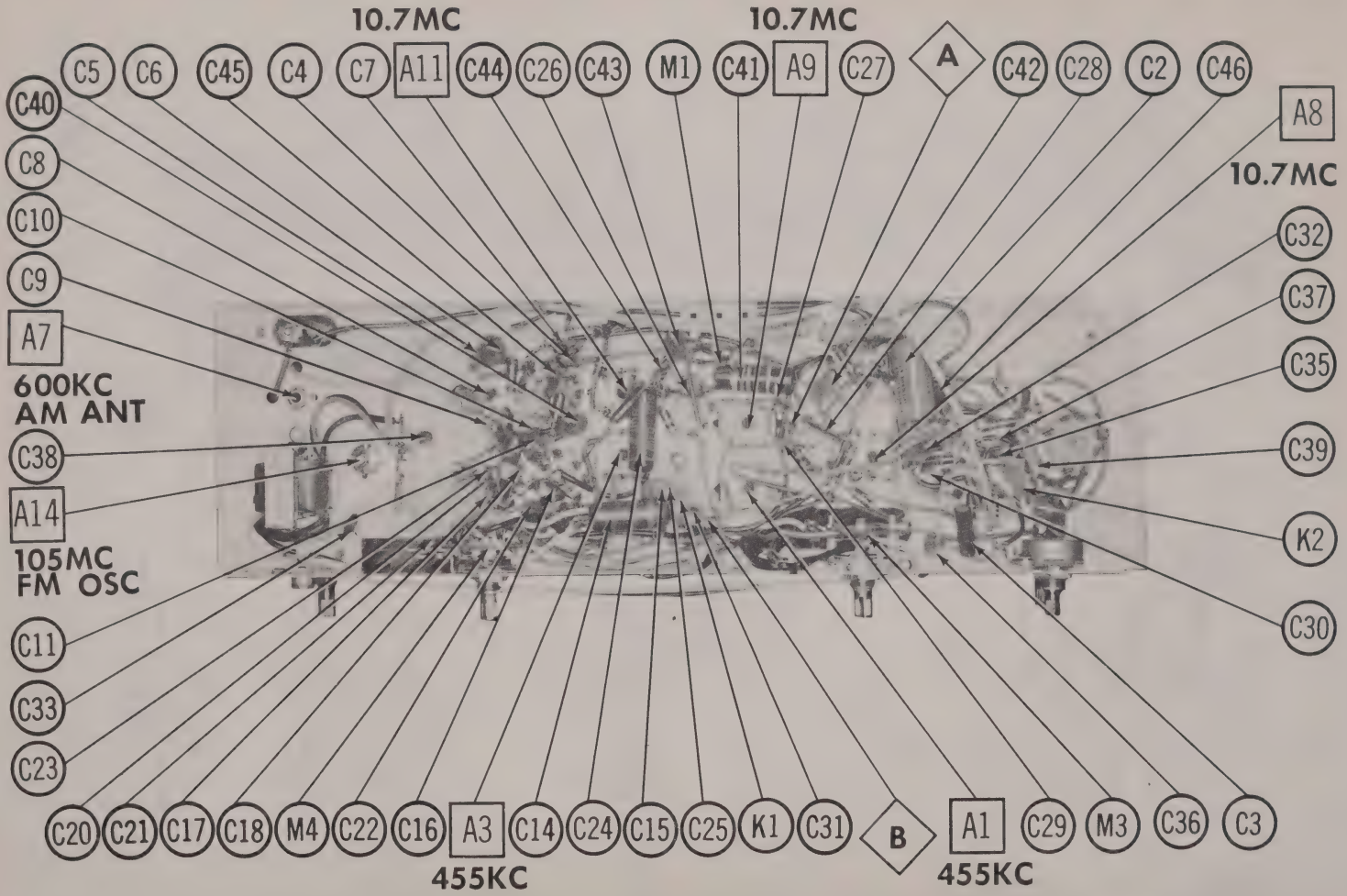


TRADE-WIND
MODELS 5500, 5600



CHASSIS BOTTOM VIEW-ALIGNMENT, CAPACITOR & MISC. IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	GENERAL ELECTRIC USE	GENERAL ELECTRIC TYPE	ITEM No.	RAYTHEON USE	RAYTHEON TYPE	SYLVANIA TYPE
V1	FM RF Amp. - FM Mixer	12AT7	V5	Ratio Det. - AM Det. - AF Amp.	19T8	
V2	FM Osc. - AM Conv.	12BE6				
V3	1st IF Amplifier	12BA6	V6	Intercom. Preamp.	12AV6	
V4	2nd FM IF Amplifier	12BA6	V7	Output	35C5	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA TRADE-WIND PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■80	150	〉	AFH3-13	B0180	FP216.2	TMD-2135	TVLS-3444.3*	
B	▲40	150			BR4015	TC48	TD-40-150		
C	40	150							
C2	4	50		PRS1400	BBR4-50	TC50X4	TD-4-50	TVA-1402	
C3	10	12		XPP-12010	NLW 10-15	TT12X10	ML10-15	TE-1128	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	100		DI-100	DD-101	L10T1	CCD-101	GP310	10TS-T10
C5	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C7	470		DI-470	DD-471	L10T47	CCD-471	GP347	10TS-T47
C8	100		DI-100	DD-101	L10T1	CCD-101	GP310	10TS-T10
C9	2.2 10%		NPO-SI 2.2	TCZ-2R2	C10V22C	CCTO-2R2	CNO-522	10TCC-V22
C10	100		DI-100	DD-101	L10T1	CCD-101	GP310	10TS-T10
C11	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C12	30 10%		DI-30	DD-300	L10Q3	CCD-300	GP430	10TS-Q30
C13	4.7 10%		NPO-SI 4.7	TCZ-4R7	C10V47C	CCTO-4R7	CNO-547	10TCC-V47
C14	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C15	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C16	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C17	30 10%		DI-30	DD-300	L10Q3	CCD-300	GP430	10TS-Q30
C18	7.5 10%							
C19								
C20	15 10%		DI-15	DD-150	L10Q15	CCD-150	GP415	10TS-Q15
C21	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C22	20000	(10000) †	BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C23	10	Note 1	DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C24	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S20
C25	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C26	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C27	2000		BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C28	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C29	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C30	10 N150 10%					*		10TCP-Q10
C31	220		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C32	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C33	5000		BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C34	5000		BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C35	1000		BPD-001	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C36	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C37	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C38	220		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C39	.01 400V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C40	10000	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C41	.047 400V		P488N-047	DD-603	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C42	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C43	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C44	2000		BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C45	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C46	2000		BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20

Note 1. Not used in some versions. † Alternate Value.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA TRADE-WIND PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	VR-500MK	B-60-S	A47-500K-Z	Q13-133	U48	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power Off-On
R2A	1meg	½	VR-1MK	B-70	A47-1meg-Z	Q13-137	U53	Tone
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R3A	20Ω	2(WW)		WW-200	A43-20	WPK20	C20P	Master Speaker Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R4A	20Ω	2(WW)		WW-200	A43-20	WPK20	C20P	Intercom Speaker Volume
B	Shaft			Not Req.	Not Req.	Not Req.	Not Req.	
	20Ω	2(WW)		WW-200	A43-20	WPK20	C20P	Remote Speaker Volume
	Shaft			Not Req.	Not Req.	Not Req.	Not Req.	

RESISTORS (IRC or EQUIVALENT)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	100Ω	
R6	68Ω	
R7	470K	
R8	47Ω	
R9	100Ω	
R10	22K	
R11	2.2meg	
R12	100Ω	
R13	68Ω	

ITEM No.	RATING	REMARKS
R14	100K	
R15	82K	
R16	100Ω	
R17	68Ω	
R18	56Ω	
R19	22K	
R20	22K	
R21	22K	
R22	6.8meg	

ITEM No.	RATING	REMARKS
R23	39K	
R24	220K	
R25	10K	
R26	180Ω	
R27	5600Ω	
R28	250Ω 5W	IRC#PW5-250Ω
R29	15Ω 5W	IRC#PW5-15Ω
R30	180K	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	TRADE-WIND PART No.	REPLACEMENT DATA	
K1	AM Diode RF Filter	100mmf, 100mmf, 47K		Aerovox	PA-97
				Centralab	PC-50
				Cornell-Dubilier	1iTM1
				Sprague	D-1
K2	Audio Coupling	250mmf, 5000mmf, 500K, 500K		Aerovox	PA-112-1
				Centralab	PC-70
				Cornell-Dubilier	1i2TM1
				Mallory	MS-111
				Sprague	T-3

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA TRADE-WIND PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	FM Ant. Coil	RFC-FCR-2 ①				① Wound 1500Ω Resistor
L2	RF Choke	RFC-FRP-1	SW-631	4609	RTC-8519	5uh
L3	FM RF Coil	RC-FM-1				
L4	FM Osc. Coil	RC-FO-2				
L5	1st FM IF Trans.	TRI-107-1	FM-254	1463	RTC-8599	
L6	AM Ant. Trans.	TRC-AA-1	BC-386	70-A	RTC-8731	
L7	RF Choke	RFC-AG-4	BC-562	4604	RTC-8516	1.2uh
L8A	AM Osc. Coil	〉TRC-AO-1	BC-400	5481-C	RTC-9192	
B	Cathode Choke	〉	BC-563	4606	RTC-8517	2uh
L9	1st AM IF Trans.	TRI-455-1	BC-352	12-C1	RTC-8632	
L10	2nd FM IF Trans.	TRI-107-1	FM-254	1463	RTC-8599	
L11	2nd AM IF Trans.	TRI-455-1	BC-353	12-C2	RTC-8633	
L12	Ratio Detector	TRI-107-R	FM-255	1465	RTC-8600	
L13	Fil. Choke	RFC-FH-5	BC-563	4606	RTC-8517	2uh
L14	Fil. Choke	RFC-FH-5	BC-563	4606	RTC-8517	2uh

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (INPUT)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	TRADE-WIND PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1	68	TRA425-7A					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	TRADE-WIND PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	4600Ω	6-8Ω	TRA253-676			24S04	S-63X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	TRADE-WIND PART No.	QUAM PART No.	
SP1	2½"x 10"	PM	6-8Ω	2510CM-4 ‡		‡ Master Speaker. Some versions use 6"x 9" unit.
SP2	5"	PM	6-8Ω	W5BZ-7 ♦	5A15RZ8	♦ Remote Speaker-Mike
SP3	5"	PM	6-8Ω	W5BZ-7 ♦	5A15RZ8	* Front door Speaker-Mike
	5"	PM	6-8Ω	W5BZ-7 ♦	5A15RZ8	
	3½"	PM	6-8Ω	W3BZ-6 *	3A07Z8	

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	TRADE-WIND PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.110A		1N1763 *	40H *	SR500 *	* Silicon Type

MISCELLANEOUS

ITEM No.	PART NAME	TRADE-WIND PART No.	NOTES
M2	Tuning Cap.	CT-4216-FM-3	4 Gang (AM Section, Ant. 27—483mmf, Osc. 20—183mmf)
M3	Switch	SR-406-777	Selector (Rotary Wafer Type)
M4	Switch	SR-425K	FM-AM (Rotary Wafer Type)
M5	Switch	SS-31	Listen-Off #1 (SPTT Slide Type)
M6	Switch	SS-31	Listen-Off #2 (SPTT Slide Type)
M7	Switch	SS-31	Listen-Off #3 (SPTT, Slide Type)
M8	Switch	SS-31	Listen-Off #4 (SPTT Slide Type)
M9	Switch	SS-31	Listen-Off #5 (SPTT, Slide Type)
M10	Switch	SS-31	Listen-Off #6 (SPTT Slide Type)
M11	Switch	SS-31	Listen-Off #7 (SPTT Slide Type)
M12	Switch	SS-31	Listen-Off #8 (SPTT Slide Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Glass	700A-403	Dial
Pointer	2813	Dial
Knob	7400-1	Tuning, Volume, Tone, Spk. Volume, Intercom Volume, Intercom Function,
Knob	400-1	Speaker Volume Radio Function

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder

VIKING MODELS 242-126, 242-127, 242-128, 242-129

VIKING MODELS 242-126,
242-127, 242-128, 242-129

MODEL 242-128

VIKING MODELS 242-126,
242-127, 242-128, 242-129

TRADE NAME	Johnson Viking Models 242-126, 242-127, 242-128, 242-129
MANUFACTURER	E. F. Johnson Co., Waseca, Minnesota
TYPE SET	AC-Battery Operated 10 Tube Crystal Controlled Citizens Band Transmitter-Receiver
POWER SUPPLY	Model 242-126 : 110-120 Volts AC, 60 Cycles Model 242-127 : 110-120 Volts AC, 60 Cycles or 6 Volt Storage Battery Model 242-128 : 110-120 Volts AC, 60 Cycles or 12 Volt Storage Battery Model 242-129 : 110-120 Volts AC, 60 Cycles or 24 Volt Storage Battery
RATING	Model 242-128 : 61 Watts, .58 Amp. @ 117 Volts AC (Receive) 73 Watts, .68 Amp. @ 117 Volts AC (Transmit) 4.8 Amp. @ 12.6 Volts AC (Receive) 5.5 Amp. @ 12.6 Volts AC (Transmit)
FREQ. RANGE	Any 5 of Citizens Band Channels 1 thru 23

NOTICE

ONLY THOSE PERSONS PROPERLY LICENSED BY FCC ARE PERMITTED TO EFFECT REPAIRS OR MAKE CRYSTAL SUBSTITUTION ON THIS TYPE EQUIPMENT.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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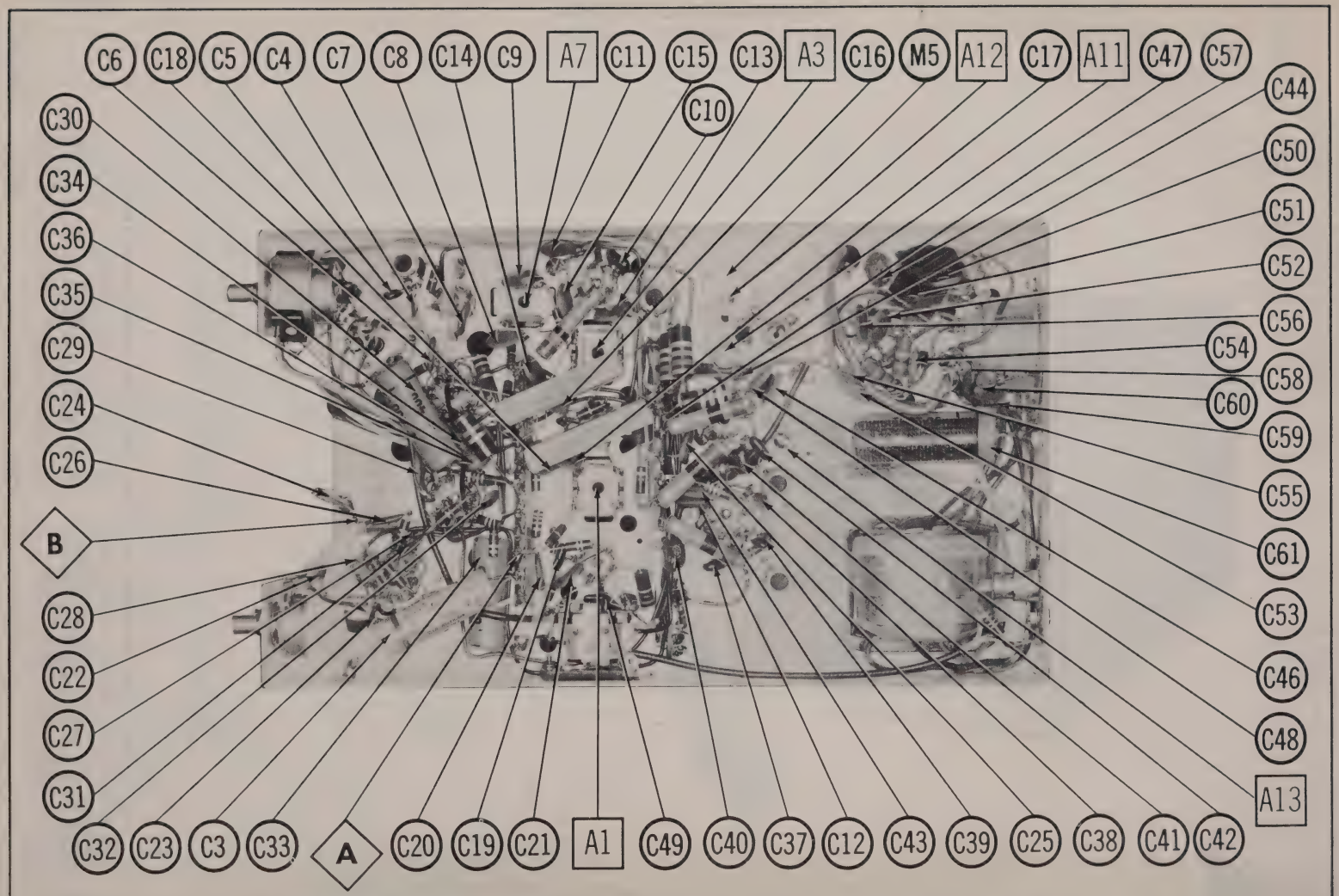
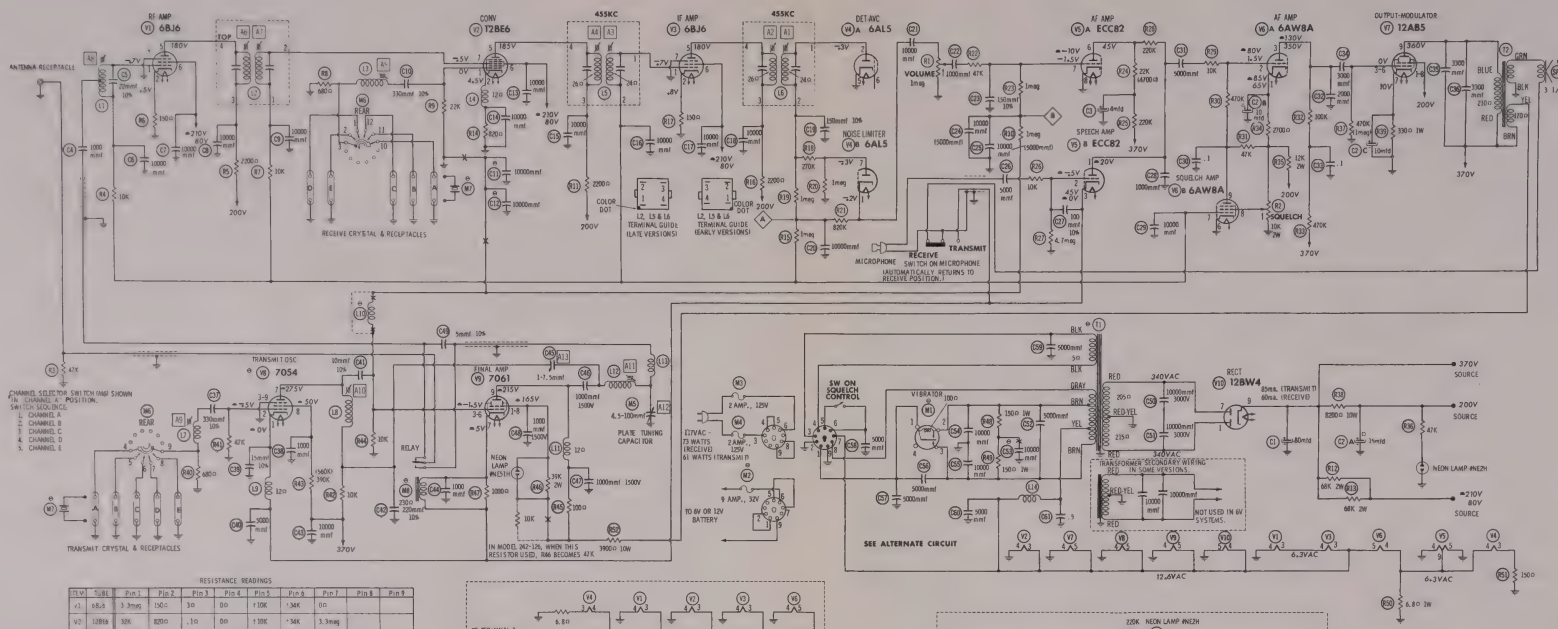
KZ386

SET 527 FOLDER 13



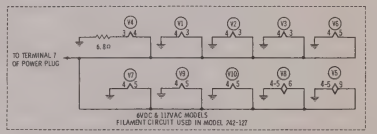
CHASSIS BOTTOM VIEW-ALIGNMENT, CAPACITOR & MISC. IDENT.

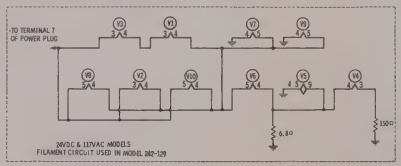

RF AMP V1 6BJ6
CONV V2 12BE6
455KC
IF AMP V3 6BJ6
455KC
DET-AVC V4 A 6AL5
AF AMP V5 A ECC82
AF AMP V6 A 6AW8A
OUTPUT-MODULATOR V7 12AB5
ANTENNA RECEPTACLE
TOP
REAR
RECEIVE CRYSTAL & RECEPTACLES
VOLUME 1meg
NOISE LIMITER V4 B 6AL5
SPEECH AMP V5 B ECC82
SQUELCH AMP V6 B 6AW8A
SQUELCH 10K 2W
RECEIVE SWITCH ON MICROPHONE (AUTOMATICALLY RETURNS TO RECEIVE POSITION.)
TRANSMIT
MICROPHONE
LZ, L5 & L6 TERMINAL GUIDE (11A"E" VERSIONS)
LZ, L5 & L6 TERMINAL GUIDE (EARLY VERSIONS)
COLOR DOT
TRANSMIT OSC V8 7054
FINAL AMP V9 7061
PLATE TUNING CAPACITOR
RELAY
NEON LAMP #NE51H
IN MODEL 242-126, WHEN THIS RESISTOR USED, R46 BECOMES 47K
TRANSMIT CRYSTAL & RECEPTACLES
CHANNEL SELECTOR SWITCH (MAY BE SHOWN IN CHANNEL "A" POSITION. SWITCH SEQUENCE: 1. CHANNEL A 2. CHANNEL B 3. CHANNEL C 4. CHANNEL D 5. CHANNEL E
SW ON SQUELCH CONTROL
VIBRATOR
117VAC 73 WATTS (RECEIVE) 61 WATTS (TRANSMIT)
9 AMP., 32V
TO 6V OR 12V BATTERY
SEE ALTERNATE CIRCUIT
RECT V10 12BW4
85ma. (TRANSMIT) 60ma. (RECEIVE)
TRANSFORMER SECONDARY WIRING IN SOME VERSIONS.
NOT USED IN 6V SYSTEMS.
370V SOURCE
200V SOURCE
210V 80V SOURCE
NEON LAMP #NE2H
6.3VAC
12.6VAC
6.8Ω 1W

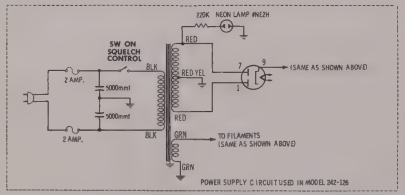
RESISTANCE READINGS

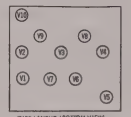
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
v1	6BJ6	3.3meg	150Ω	3Ω	0Ω	†10K	†34K	0Ω		
V2	12BE6	32K	820Ω	1Ω	0Ω	†10K	†34K	3.3meg		
v3	6BJ6	3.3meg	150Ω	1Ω	0Ω	†10K	†34K	0Ω		
v4	6AL5	3meg	1.3meg	1Ω	1Ω	0Ω	NC	1meg		
v5	ECC82 12AU7	†460K	4.7meg	INF +0.0	0Ω	0Ω	†240K	2meg	0Ω	1Ω
V6	6AW8A	10K	525K	†570K	1Ω	1Ω	0Ω	3.3meg	900Ω	†60K
v7	12AB5	†8200Ω	TP	470K	0Ω	1Ω	NC	330Ω	†8200Ω	†210Ω
V8	7054	~120	47K	0Ω	0Ω	1Ω	NC	†10K	†390K	0Ω
V9	7061	NC	NC	10K	0Ω	1Ω	NC	~250Ω	†43K	†4200Ω
V10	12BW4	250Ω	NC	NC	1Ω	0Ω	NC	205Ω	NC	1

ALL MEASUREMENTS MADE IN "RECEIVER" POSITION UNLESS OTHERWISE DESIGNATED.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
▲ MEASURED IN "TRANSMIT" POSITION.
† MEASURED FROM PIN 9 OF V10.
NC NO CONNECTION
TP TIE POINT









TUBE LAYOUT (BOTTOM VIEW)

1. DC voltage measurements taken with vacuum tube voltmeter, AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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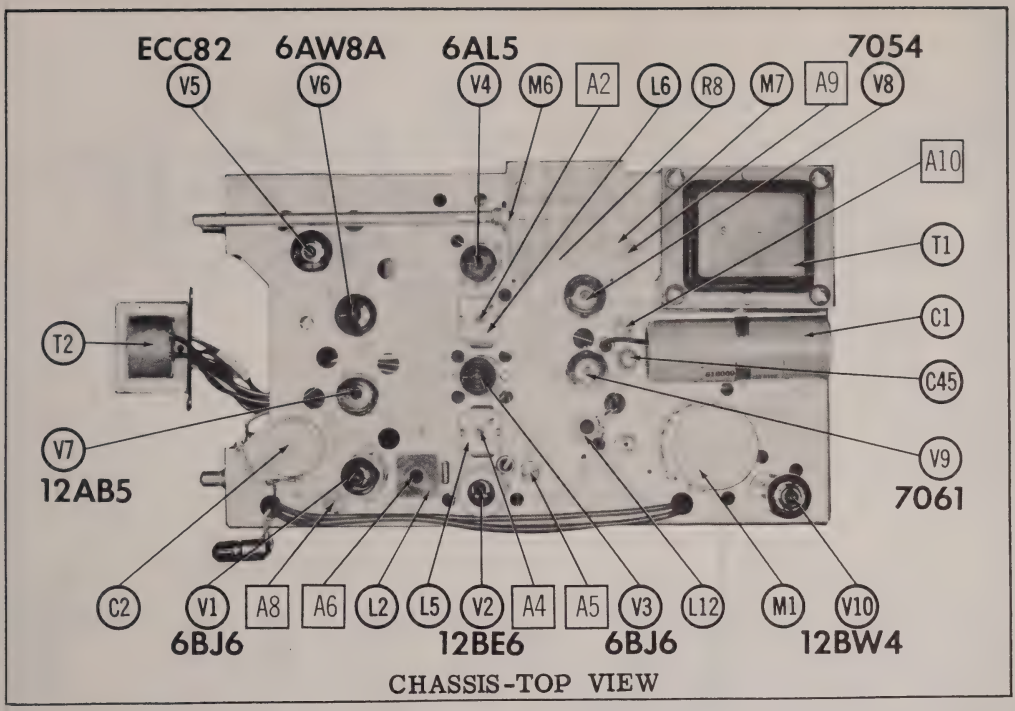
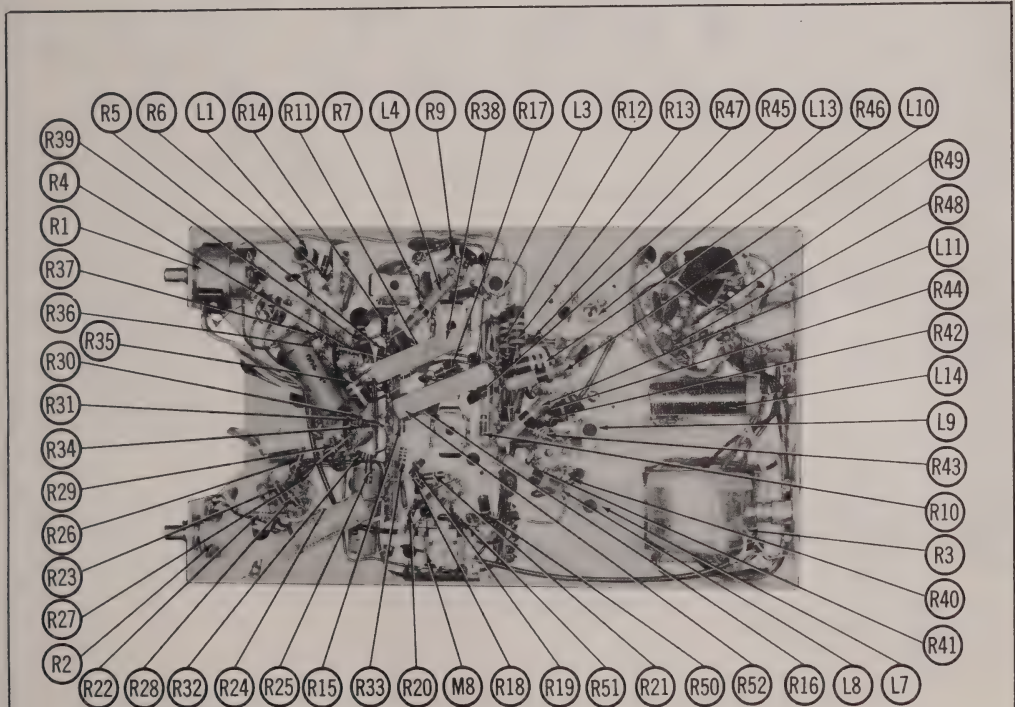
VIKING MODELS 242-126, 242-127, 242-128, 242-129



CHASSIS-TOP VIEW



CHASSIS BOTTOM VIEW-RESISTOR IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

RECEIVER ALIGNMENT

Insert receiver crystals for channels 1, 12 and 22 sockets (marked R1, R12, R22)

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 1 (grid) of Conv. Low side to chassis.	455KC +.1% (400∿ 30% Mod.)	Any Channel	Across voice coil. DC probe of VTVM to point Ⓐ. Common to chassis.	A1, A2, A3, A4	Adjust for maximum output. Adjust generator output for 1.5V maximum on VTVM.
	Check oscillator frequency (26.650MC, channel 12) with accurate (±.001%) frequency measuring instrument-Zero Beat (within 100∿) the Receiver Oscillator with the Test instrument by adjusting A5.					
2.	High side thru 6db, 50-51.5Ω pad to antenna jack.	26.965MC (400∿ 30% Mod.)	1	Across voice coil DC probe of VTVM to point Ⓐ. Common to chassis.	A6	Adjust for maximum output on second peak inward. Adjust generator output for 2V maximum on VTVM.
3.	"	27.225MC	22	"	A7	Adjust for maximum output on first peak in from core fully out.
4.	"	27.105MC	12	"	A8	"

TRANSMITTER ALIGNMENT

Insert crystal in Channel 12 socket (marked T12).

1. Connect a 50-51.5Ω non-inductive dummy load in series with a 0-500MA RF milliammeter to the Antenna Jack.
2. Set Channel Switch to Channel 12 (Position C). Connect DC probe of VTVM to Point Ⓑ, common to chassis. Connect DC VTVM across R45 (100Ω). (Each volt will indicate 10MA of V9 plate current). CAUTION: Meter is above ground potential.
3. Press Push-To-Talk switch on Mic.

OSCILLATOR ADJUSTMENT

4. Check Transmitter Frequency of 27.105MC with an accurate (.001%) frequency measuring instrument.
5. Zero Beat within 100∿ the Transmitter Oscillator with the test instrument by adjusting A9.
6. Adjust A10 for maximum negative voltage at point Ⓑ.

OUTPUT ADJUSTMENT

7. Adjust A11 for Dip in V9 plate current (Resonance).
8. Adjust A12 for 2.4V (24MA) (or less for maximum output).
9. Readjust A11 and A12, adjusting A11 last.

NEUTRALIZING

10. Note meter reading at point Ⓑ as A11 is tuned thru resonance. If voltage increases as A11 is backed out, adjust A13 clockwise slowly and recheck A11. If voltage increases as A11 is turned into coil, adjust A13 counterclockwise slowly and recheck A11. Adjustment of A13 is correct when voltage increases equally or not at all on each side of resonance.
11. Repeat Steps 7 and 8 adjusting A11 last, and slightly counterclockwise for maximum output with 24MA (or less) V9 plate current.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amplifier	6BJ6	V6	AF Amp. -Squelch Amp.	6AW8A
V2	Converter	12BE6	V7	Output-Modulator	12AB5
V3	IF Amplifier	6BJ6	V8	Trans. Oscillator	7054 (12BY7A) *
V4	Det.-AVC-Noise Limiter	6AL5	V9	Final Amplifier	7061
V5	AF Amp. -Speech Amp.	ECC82/12AU7	V10	Rectifier	12BW4

GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

* Used in Models 242-127

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	JOHNSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	80	450	22.1298-1	PRS1780	BR8045	TC80	TD-80-450	TVA-1716	
C2A	■15	300	22.1541	AFH3-22	C0760	FP328	TMT-3292	TVL-3580	
B	▲10	150							
C	10	25							
C3	4	350	22.1654	PRS1600	BR435	TC697	TD-4-450	TVA-1601	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C5	22 10%		1469-000022	TCZ-22	22R5Q22	CM-19B-220K	CNO-422	MS-422
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C7	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C8	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C9	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C10	330 10%		1469-00033		5R5T33	CM-19B-331K	MCB241	MS-333
C11	10000	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C12	10000	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C14	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C15	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C16	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C17	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C18	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C19	150 10%		1469-00015	TCZ-150	22R5T15	CM-19B-151K	MCB236	MS-315
C20	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C22	1000		BPD-001	DD-103	BYA10D1	CCD-102	B-210	5HK-D10
C23	150 10%		1469-00015	TCZ-150	22R5T15	CM-19B-151K	MCB236	MS-315
C24	10000	(5000) †	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	10000	(5000) †	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C26	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C27	100 10%		1469-0001	TCZ-100	22R5T1	CM-19B-101K	MCB235	MS-31
C28	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C29	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C30	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C31	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C32	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C33	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C34	3000		DI-3000	DD-302	BYA10D3	CCD-302	B-230	10TS-D30
C35	3300		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C36	3300		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C37	330 10%		1469-00033		5R5T33	CM-19B-331K	MCB241	MS-333
C38	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C39	15 10%		1469-000015	TCZ-15	22R5Q15	CM-19B-150K	CNO-415	MS-415
C40	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C41	10 10%		1469-00010	TCZ-10	22R5Q1	CM-19B-100K	MCB275	MS-41
C42	220 10%		1469-00022	TCZ-220	22R5Q22	CM-19B-221K	CNO-322	MS-322
C43	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C44	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C45	1-7.5	#22.1514		829-7				

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C46	1000 1500V		HVD-15-1000	DD30-102	HVB20D1	3CCD-102	2HV-210	20GA-D1
C47	1000 1500V		HVD-15-1000	DD30-102	HVB20D1	3CCD-102	2HV-210	20GA-D1
C48	1000 1500V		HVD-15-1000	DD30-102	HVB20D1	3CCD-102	2HV-210	20GA-D1
C49	5 10%		1469-000005	TCZ-4R7	22R5V5	CM-19B-050K	MCB205	MS-55
C50	10000 3000V	Note 2					GEM-3011	30GA-S10
C51	10000 3000V						GEM-3011	30GA-S10
C52	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C53	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C54	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C55	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C56	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C57	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C58	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C59	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C60	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C61	.5 400V		P488N-5		CUB4P5	4DP-6-504	GEM-405	4TM-P50

Note 1. Not used in some versions.
Note 2. Not used in 6 volt versions.
† Alternate Values.
# Viking Part Number.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	JOHNSON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	1meg	½	22.1647	B-70	A47-1meg-Z	Q13-137	U53	Volume
B	Shaft			Not Req.	RS-2	Not Req.	Not Req.	
R2A	10K	2(WW)	22.1648		A43S-10K	WP10000	R10ML	Squelch
B	Shaft				RS-2	Not Req.	DS-36	
C	Switch				Not Req.	76-11	US-30	Power Off-On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R3	47K				R28	220K			
R4	10K				R29	10K			
R5	2200Ω				R30	470K			
R6	150Ω				R31	47K			
R7	10K				R32	100K			
R8	680Ω				R33	470K			
R9	22K				R34	2700Ω			
R10	1meg				R35	12K 2W			
R11	2200Ω				R36	47K			
R12	68K 2W				R37	470K			(1meg) *
R13	68K 2W				R38	8200Ω 10W	PW10-8200	10W-SQ-8200	
R14	820Ω				R39	330Ω 1W			
R15	1meg				R40	680Ω			
R16	2200Ω				R41	47K			
R17	150Ω				R42	10K			
R18	270Ω				R43	390K			(560K) *
R19	1meg				R44	10K			
R20	1meg				R45	100Ω			
R21	820K				R46	39K 2W			
R22	47K				R47	1000Ω			
R23	1meg				R48	150Ω 1W			
R24	22K			(4700Ω) *	R49	150Ω 1W			
R25	220K				R50	6.8Ω 1W			
R26	10K				R51	150Ω			
R27	4.7meg				R52	3900Ω 10W	PW10-3900	10W-SQ-3900	

* Alternate Value.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA JOHNSON PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	Ant.	23.1175-21				① IRC Part #CL-1
L2	RF	22.1623				
L3	Osc. Grid	23.1175-15	TV-118	6171-A	RTC-8609	
L4	RF Choke(20uh)	22.1549 ①	TV-192	6152	RTC-8584	② Not used in some versions.
L5	Input IF	22.1556	BC-352	12-C1	RTC-8632	
L6	Output IF	22.1557	BC-353	12-C2	RTC-8633	
L7	Osc. Grid	23.1175-17	TV-118	6171-A	RTC-8609	
L8	RF Choke(20uh)	22.1549 ①	TV-192	6152	RTC-8584	
L9	Osc. Plate	23.1175-17	TV-118	6171-A	RTC-8609	
L10	RF Choke(20 uh)	22.1549 ① ②	TV-192	6152	RTC-8584	
L11	RF Choke (20uh)	22.1549 ①	TV-192	6152	RTC-8584	
L12	Final Plate	23.1175-24				
L13	Ant.	23.1175-23	TV-118	6171-A	RTC-8609	
L14	Hash Choke (4uh)	16.1456		5219	RTC-9181	

TRANSFORMER (POWER)

ITEM No.	RATING PRI. 1	PRI. 2	SEC. 1	REPLACEMENT DATA JOHNSON PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V * @ .68A (AC Only)	18V(6Vtap Not Used) Tap @ 12.6 VCT @ 3A	680VCT @ .085A	22.1560 ①					①Part #22.1620 used in 6V operation. * Not used on DC operation.
	SEC. 2	SEC. 3	SEC. 4						
	12.6VCT @ 2.6A (117V Operation)								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI. 1	SEC.	REPLACEMENT DATA JOHNSON PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	4200Ω	3-4Ω	22.1616					
	PRI. 2							
	4200Ω							

SPEAKER

ITEM No.	TYPE SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA JOHNSON PART No.	QUAM PART No.	NOTES
SP1	3½"	PM	3-4Ω	22-1612*	3A070T	* Alternate Part #22.1612-2

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA JOHNSON PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	RADIART PART No.	NOTES
M1	Interrupter	12.6	115v	22-1570-1 *	6301 *	GI601 *	6301 *	* 12 Volt
	Interrupter	6	115v	22-1570-2 ♦	5301 ♦	1601 ♦	5301 ♦	♦ 6 Volt

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA JOHNSON PART No. FUSE	HOLDER	LITTELFUSE PART No. FUSE	HOLDER	BUSS PART No. FUSE	HOLDER
M2	SFE	9A 32V	22.1590-4①		307009 (SFE 9A 32V)	155009	SFE 9	HHH
	SFE	4A 32V	22.1590-1②		307004 (SFE 4A 32V)	155004	SFE 4	HRF
	SFE	20A 32V	22.1590-6 ③		311020 (SFE 20A 32V)	155020	SFE 20	HHJ
M3	3AG	2A 125V	22.1257 ④		312002 (3AG 2A 125V)		AGC 2	
M4	3AG	2A 125V	22.1257 ④		312002 (3AG 2A 125V)		AGC 2	

① 12 Volt Operation. ② 24 Volt Operation. ③ 6 Volt Operation. ④ AC Operation.

MISCELLANEOUS

ITEM No.	PART NAME	JOHNSON PART No.	NOTES
M5	Variable Cap.	148-6-3	(4.5-100mmf)
M6	Switch	22.1615	Channel Selector (Rotary Wafer Type)
M7	Crystal	250-901	Channel 1 (Matched Pair, Receive-Transmit)
	Crystal	250-902	Channel 2 (Matched Pair, Receive-Transmit)
	Crystal	250-903	Channel 3 (Matched Pair, Receive-Transmit)
	Crystal	250-904	Channel 4 (Matched Pair, Receive-Transmit)
	Crystal	250-905	Channel 5 (Matched Pair, Receive-Transmit)
	Crystal	250-906	Channel 6 (Matched Pair, Receive-Transmit)
	Crystal	250-907	Channel 7 (Matched Pair, Receive-Transmit)
	Crystal	250-908	Channel 8 (Matched Pair, Receive-Transmit)
	Crystal	250-909	Channel 9 (Matched Pair, Receive-Transmit)
	Crystal	250-910	Channel 10 (Matched Pair, Receive-Transmit)
	Crystal	250-911	Channel 11 (Matched Pair, Receive-Transmit)
	Crystal	250-912	Channel 12 (Matched Pair, Receive-Transmit)
	Crystal	250-913	Channel 13 (Matched Pair, Receive-Transmit)
	Crystal	250-914	Channel 14 (Matched Pair, Receive-Transmit)
	Crystal	250-915	Channel 15 (Matched Pair, Receive-Transmit)
	Crystal	250-916	Channel 16 (Matched Pair, Receive-Transmit)
	Crystal	250-917	Channel 17 (Matched Pair, Receive-Transmit)
	Crystal	250-918	Channel 18 (Matched Pair, Receive-Transmit)
	Crystal	250-919	Channel 19 (Matched Pair, Receive-Transmit)
	Crystal	250-920	Channel 20 (Matched Pair, Receive-Transmit)
	Crystal	250-921	Channel 21 (Matched Pair, Receive-Transmit)
	Crystal	250-922	Channel 22 (Matched Pair, Receive-Transmit)
	Crystal	250-923	Channel 23 (Matched Pair, Receive-Transmit)
M8	Relay	22-1656 *	Antenna Switching (SPDT, 290Ω Coil)
	Microphone	22-1627-2	

* Early versions used a 2300Ω relay, replace with Part #22-1656.

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	22.920	
Cabinet	23.1380-2	

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder

V-M MODELS 1571,
1572, 1586, 1587

V-M MODELS 1571,
1572, 1586, 1587

MODEL 1586

MODEL 1587

V-M MODELS 1571,
1572, 1586, 1587

GENERAL INFORMATION

V-M Models 1571, 1572, 1586, and 1587 are basically alike in design and construction. Model 1571 is the basic record changer and Models 1572, 1586, and 1587 are variations thereof. Model 1571 is equipped with a 4-speed, 2-pole motor and a stereo cartridge with a .7 mil diamond stylus and a 3 mil sapphire stylus. Model 1572 is equipped with a 4-speed, 4-pole motor and a plug-in tone arm head for magnetic cartridges. Model 1586 is a Model 1571 mounted on a high-inpact plastic base. Model 1587 is a Model 1572 mounted on a high-impact plastic base.

These changers are designed to play up to twelve 10-inch records, ten 12-inch records or fourteen 7-inch records, with 45 rpm spindle adaptor, in automatic sequence and shut off after playing the last record.

A velocity type trip, which requires a rapid acceleration of the tone arm to actuate the trip mechanism, is used in these changers.

Connect these changers to a 117V, 60 cycle, AC source only, unless otherwise specified.

Manufactured By:

V-M Corporation
375 W. Main Street
Benton Harbor, Michigan

SET 527 FOLDER 14

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

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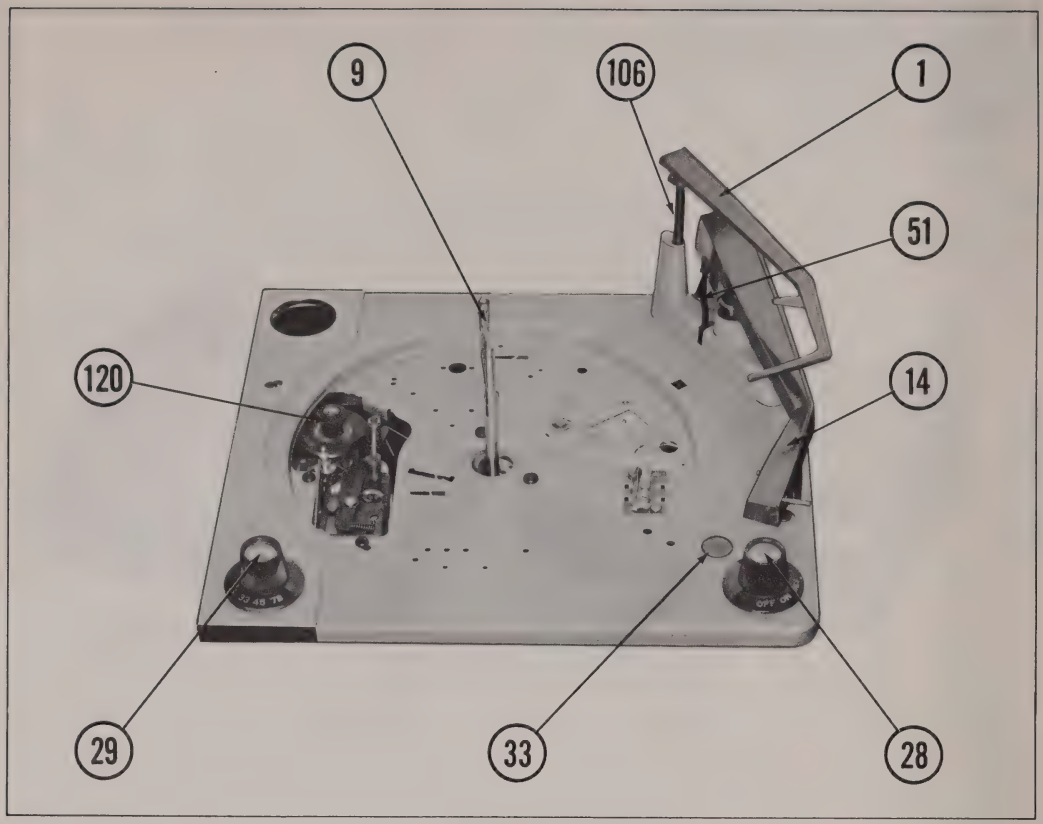


Fig. 1. Top View With Turntable Removed.

OPERATING INSTRUCTIONS

Loading

1. Pull record support arm (1) straight up until it clears the spindle and swing it to the right as far as it will go.

2. Place records on spindle so that bottom record rests on the spindle record shelf. Hold records in place and swing the record support back towards the spindle and lower it on top of records.

Starting

1. Set speed control and stylus selector to the proper position for the records to be played.

2. Turn OFF-ON-REJ knob to "REJ" and release. The changer will now cycle and automatically play the records.

Rejecting

To reject a record at any time while the changer is operating, turn the OFF-ON-REJ knob to "REJ" and release.

Manual Operating

To play records manually - lift the record support clear of the center spindle and swing it to the right as far as it will go. Turn OFF-ON-REJ knob to "REJ" and release. This will cause the changer to cycle, however, the tone arm will drop onto the rest post. The changer is now ready for manual operation. Select proper speed and stylus, then place a single record on the turntable. Lift the tone arm from the rest post and place it on the record. When the record has finished playing, the changer will again cycle and return the tone arm to the rest post. The record can then be removed and another placed on the turntable.

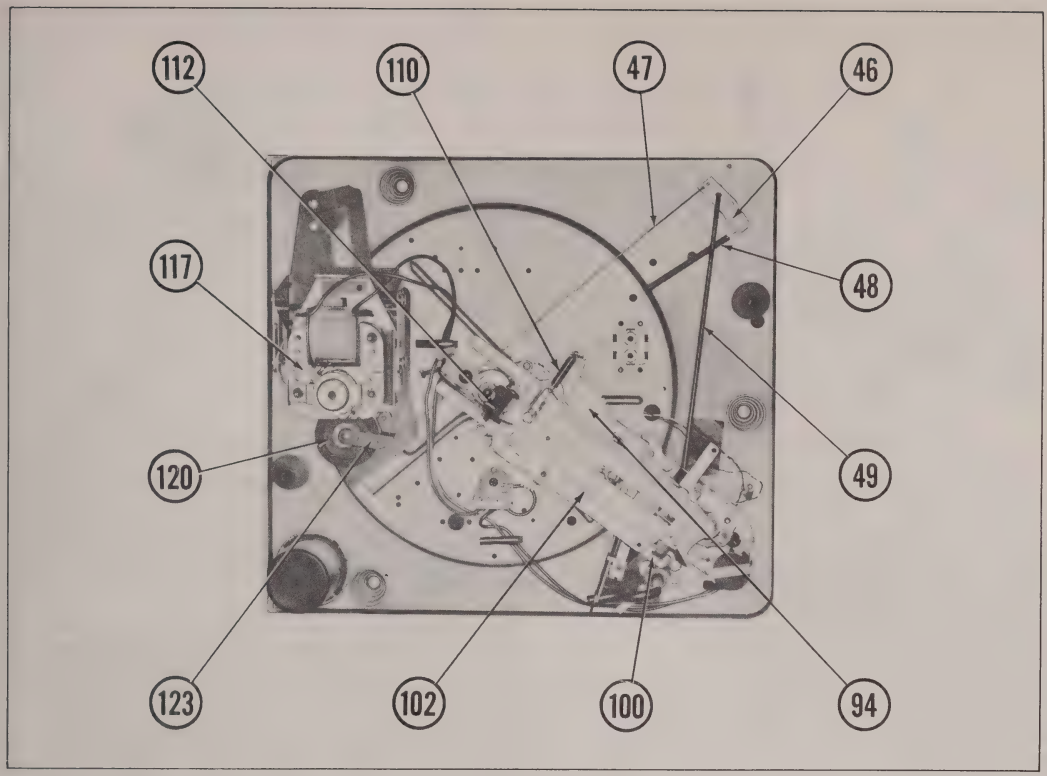


Fig. 2. Bottom View of Changer.

CHANGE CYCLE

Observe the change cycle operation while manually rotating the turntable. The following description can then be readily followed, and the function of each part more easily understood.

This changer has a velocity trip mechanism. The change cycle is started by the faster inward motion of the tone arm when the needle enters the trip grooves at the end of a record. Only records having fast finishing grooves will operate this trip.

The tone arm and trip finger cam and shaft assembly (66) are connected so that they move in unison. As the tone arm nears the end of a record, trip finger cam (66) pushes trip link (100), thus engaging and pivoting trip lever (99). As trip lever (99) pivots, pawl lever (97) pivots with it and carries the trip pawl toward the turntable hub. While a record is playing the small motions of the trip pawl are not sufficient to cycle the mechanism because, on each revolution of the turntable, the wiping contact by the hub projection moves the trip pawl back.

When the needle enters the lead out groove, the trip pawl is moved far enough to definitely engage the projection on the turntable hub. The contact between the trip pawl and the turntable hub projection gives the necessary push required to engage the teeth on main gear assembly (94) with the teeth on the turntable hub causing main gear (94) to rotate. This action starts the lateral travel of slide assembly (102). Slide assembly (102) is moved toward the rear by an eccentric mounted pin on main gear assembly (94). This pin rides in the cross slot in slide assembly (102).

As the slide assembly begins to move, lift pin (22) rides up the inclined surface on the rear of slide as-

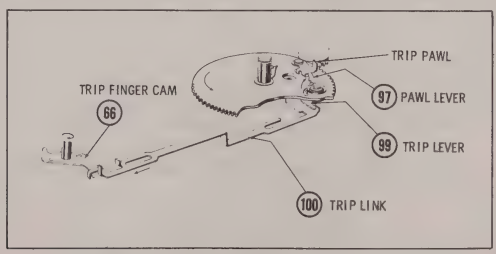


Fig. 3. Trip Mechanism Parts.

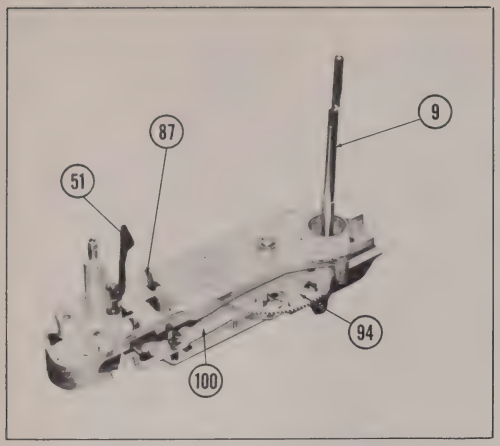


Fig. 4. Top View of Cycling Mechanism.

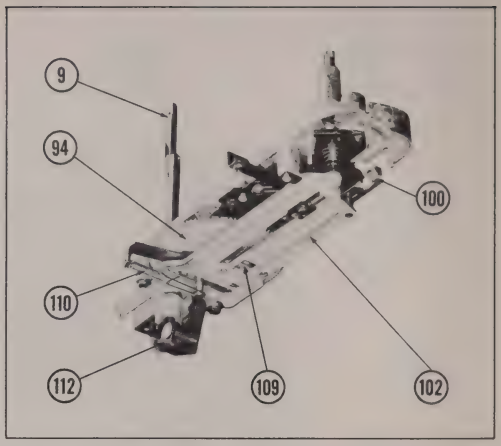


Fig. 5. Bottom View of Cycling Mechanism.

sembly (102), raising the tone arm. At the same time, trip finger cam (66) is pushed upward by lift pin spring (69), causing the two formed dimples in the trip finger cam to engage the two holes in tone arm return locator (61). This action controls the movement of the tone arm during the change cycle.

Slide assembly (102) continues to move away from the spindle until the tab formed on the rear of the slide assembly pushes against the tone arm return locator causing the tone arm to move out over the rest post.

A tab on the front of slide assembly (102) now comes in contact with the ejector bracket assembly, causing it to push spindle push rod (78) upward. This action causes the record pusher, in the spindle assembly, to drop the next record to the turntable.

Simultaneously, the trip pawl on top of main gear assembly (94) contacts and rides along the curved finger of retard assembly (91). After leaving the finger of retard assembly (91), the trip lever assembly comes in contact with the trip link guide rivet. This action cams the pawl into the trip position again; however, before the change cycle is completed the trip pawl is reset by a tab located near the cross slot in slide assembly (102).

At this time, the cam surface of the bracket on top of main gear assembly (94) moves reset lever (83) into its mid position (10" set down), where reset lever (83) is held by 12" selector (51). During this time slide assembly (102) continues to the rear and then starts forward.

If 7" records are being changed, the 7" set down lever comes up through the baseplate, beneath the outer edge of the turntable, striking the 7" button ramp. This action causes the 7" button to rise above the surface of the turntable. This action raises reset lever (83) to the upper or 7" set down position.

If 10" records are being changed, the 7" lever cannot rise sufficiently to allow 7" set down since the button on the turntable is held down by the 10" record. Consequently, reset lever (83) remains in the midposition (10" set down) as originally placed by the camming action of the bracket on top of main gear assembly (94).

When a 12" record drops to the turntable the record strikes the 12" record selector (51) and pivots it toward the rear of the changer. This action disengages the end of reset lever (83) from the edge of 12" record selector (51) and permits reset lever (83) to drop into the recess at the bottom of 12" record selector (51). Reset lever (83) then engages the bottom step of tone arm return locator (61), positioning the tone arm for 12" set down.

As slide assembly (102) continues forward, the tab on the rear of the slide moves clear of tone arm return locator (61) and trip finger cam (66), which are still locked together. This action permits tone arm return spring (60) to move the tone arm inward until one of the three set down steps in tone arm locator (61) strikes reset lever (83), stopping the inward travel of the tone arm directly above the point of landing. The tone arm is than lowered to the lead in groove of the record as lift pin (22) rides down the incline on the rear of slide assembly (102). As pressure is released from lift pin spring (69), trip finger cam (66) and tone arm return locator (61) separate, permitting the tone arm to track freely across the record.

After the record has played and the mechanism trips, the preceding sequence of cycling and playing of records is again followed until only the last record of the stack remains on the spindle shelf.

As the last record of the stack drops to the turntable, record support (1) drops below the shelf on spindle assembly (9) and the lower end of record support shaft (106) contacts the stop arm on record support guide assembly (107). The stop arm in turn applies pressure to shut-off lever (90). At this moment, cycling slide (102) is in its outermost position (away from the spindle), and the end of shut-off lever (90) is forced against escape lever (102A), preventing shut-off lever (90) from lowering further.

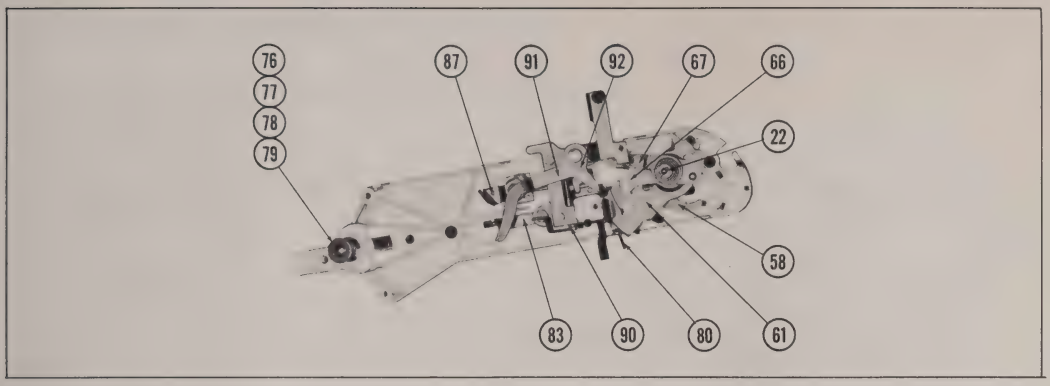


Fig. 6. Bottom View of Cycling Mechanism With Slide and Cam Gear Removed.

As the cycling slide returns to the out-of-cycle position, the end of shut-off lever (90) slides off escape lever (102A), permitting the end to extend down through the slot in the cycling slide. By this time, tone arm locator (61), has rotated too far to be blocked by shut-off lever (90), and the tone arm is permitted to land on the record.

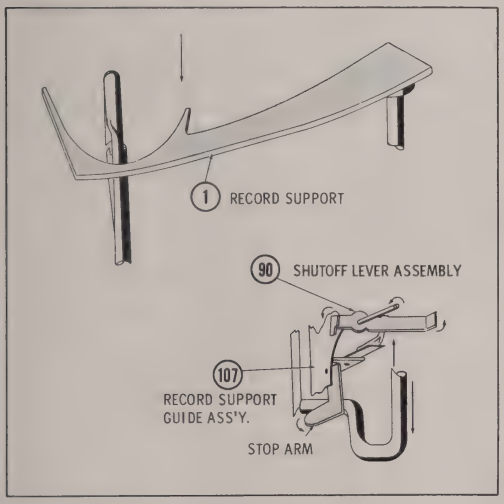


Fig. 7. Shutoff Mechanism Parts.

After the last record has played, the mechanism again goes into cycle. When cycling slide (102) has reached its outermost position, the force applied to shut-off lever (90) from record support shaft (106) causes the end of shut-off lever (90) to extend through the slot in cycling slide (102). The other end of shut-off lever (90) raises and prevents tone arm locator (61) from rotating. This action positions the tone arm directly over tone arm rest post (32).

As cycling slide (102) moves back toward the spindle, trip link (100) pushes control lever (58), actuating AC switch (57) and shutting off the power. As slide assembly (102) returns to out-of-cycle position, lift pin (22) rides down the inclined surface of the slide, lowering the tone arm to the rest post (32).

In manual play, when the record support is raised and rotated to the extreme right, it releases the pressure placed on shift lever (80) by the shift lever spring. When changer cycles, shift lever (80) is free to drop down far enough to keep locator plate (61) from turning; thus, each time the changer cycles, the tone arm will return to the rest post (as in automatic shut-off) but the motor will be left running.

LUBRICATION

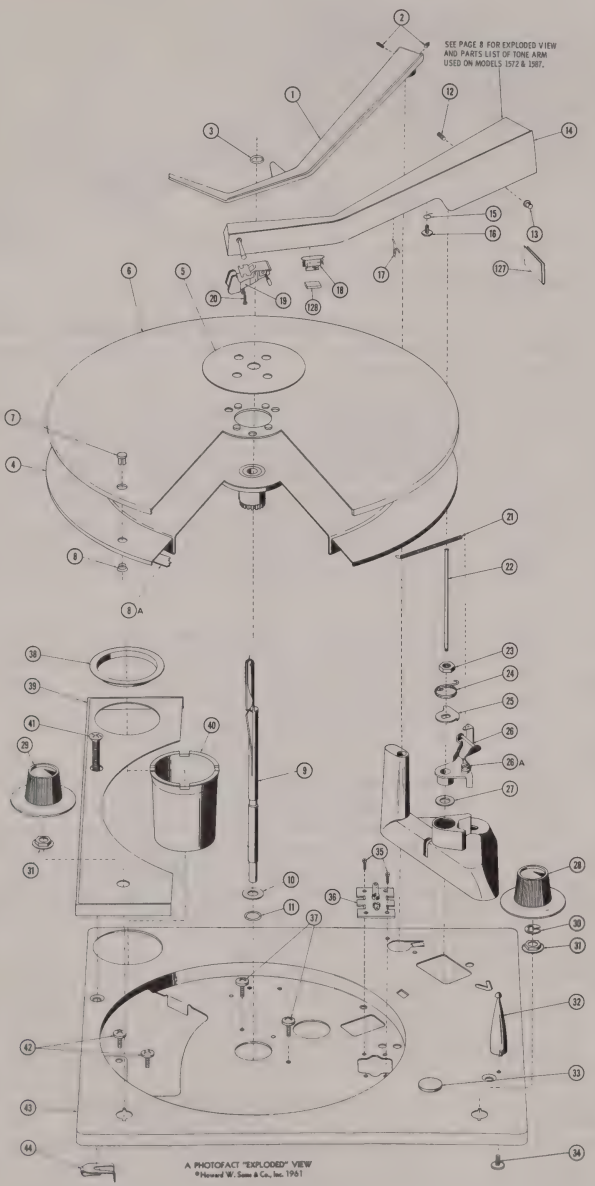
Additional lubrication should not be required for the life of the changer. However, if the changer has had extreme usage, or if parts are replaced, lubricate as follows:

Apply Andok "B" or Texaco Sta-Put to:

1. Edges of all slots in slide assembly (102)
2. Outer edges of tines on forked end of slide assembly (102).
3. Lift pin cam surface on slide assembly (102).
4. Lower surface of tone arm return locator (61).
5. Inner surface of tab on rear of slide assembly (102).

Apply one drop of light mineral oil to:

1. Trip finger cam shaft (66).
2. Push rod (78).
3. Top and bottom motor bearings.


SEE PAGE 8 FOR EXPLODED VIEW AND PARTS LIST OF TONE ARM USED ON MODELS 1572 & 1587.
A PHOTOFACT "EXPLODED" VIEW
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MECHANICAL PARTS LIST

Ref. No.	Part No.	Description
1	16805-HJ	Record Support Assy., Brown (Models 1572 & 1587)
	23973-HJ	Record Support Assy., Brown (Models 1571 & 1586)
2	14603	Set Screw
3	21813-A	"O" Ring, Turntable Retainer
4	21236-E	Turntable Assembly, Antique White (Includes Ref. Nos. 5, 6, 7 & 8)
5	24099-A	Insert, Brass
6	23559-A	Turntable Mat, Antique White
7	21798-B24	7" Button, Antique White
8	21799	Retaining Spring, 7" Button
8A	21800-A	Ramp, Turntable
9	6049	Spindle Assembly
10	23544	Bearing Washer
11	23543	Teflon Turntable Bearing
12	4923	Pivot Screw
13	4922	Pivot Button
14	23978-A	Tone Arm, Brown (Models 1571 & 1586)
	21348-HJ	Tone Arm, Brown (Models 1572 & 1587)
15	7634	Lock Spring
16	7635	Lift Screw
17	15293	Weight Adjusting Spring (Models 1571 & 1586)
	6965	Weight Adjusting Spring (Models 1572 & 1587)
18	21861	Tone Arm Clip (Models 1571 & 1586)
	6963	Tone Arm Clip (Models 1572 & 1587)
19	16708-J	Cartridge, Sonotone
	18626-D	Needle & Lever Assy.
20	21404	Cartridge Mtg. Screw
21	14431	Hinge Spring (Models 1571 & 1586)
	6643	Hinge Spring (Models 1572 & 1587)
22	4327	Lift Pin
23	14498	Keps Nut
24	4937	Safety Spring
25	4339	Safety Plate
26	4072	Hinge Arm Assy.
26A		Set Down Adj. Screw (Part of item 26)
27	2952	Fibre Washer
28	23558-A	Knob, Off-On-Rej. (Brown/ Gold Letter Fill)
29	23557-A	Knob, Speed (Brown/Gold Letter Fill)
30	1719	"C" Washer
31	8398	Pal Nut
32	5573-B31	Rest Post, Brown
33	24200-B	Needle Protector
34	2916	Screw, Rest Post Mtg.
35	1917	Screw, Phono Socket Mtg.
36	18339	Double Phono Socket
37	9823	Screw, Works Assy. Mtg.
38	21811-B	Bezel, Brass
39	23975-A	Escutcheon
40	24141	Spindle Cup
41	14846-B	Mounting Bolt, Bronze
42	6929	Screw, Motor Mtg.
43	24609-A	Baseplate Assy., Fawn (Models 1571 & 1586)
	24609-B	Baseplate Assy., Fawn (Models 1572 & 1587)
44	6244	Mounting Bolt Clip
45	6916	Control Bushing
46	7114	Control Lever Assy.
47	16810	Retraction Rod (Models 1571 & 1586)
	21733	Retraction Rod (Models 1572 & 1587)
48	7113	Reject Spring
49	6919	Reject Rod
50	1652	"C" Washer
51	2957	12" Selector
52	14951	Spring, 12" Selector
53	1588	"C" Washer
54	1719	"C" Washer, Gear Mtg.
55	9762	Spring Washer, Gear Mtg.
56	15451	Frame Assy.
57	21338	AC Switch
58	2284	Control Shaft Assy.

Fig. 8. Exploded View of Parts Above Baseplate.

MECHANICAL PARTS LIST (Cont'd.)

Ref. No.	Part No.	Description
59	24073	Screw, Works Mtg.
60	9533	Return Spring
61	6405	Locator & Bushing Assy.
62	5828	Locator Ring
63	21339	Fibre Insulating Strip
64	2573	Switch Cover
65	4212	Retainer, Switch Cover
66	15450	Finger & Shaft Assy.
67	9557	Retard Lever
68	9510	Anti-Skate Spring
69	9509	Lift Pin Spring
70	1588	"C" Washer
71	6955	Set Screw
72	23548	Insulator, Amplok
73	19800	Amplok Housing
74	8686	Screw, Amplok Housing Mtg.
75	6884	Spindle Ball
76	5022	"C" Washer
77	6885	Safety Spring
78	6874	Push Rod
79	6883	Thrust Washer
80	16807	Shift Lever
81	16808	Pin, Shift Lever
82	6713	Screw, Shift Lever
83	20886	Reset Lever
84	24689	Spring, Reset Lever
85	9849	Screw
86	24021	Spring, 7" Lever
87	21791	7" Lever
88	9849	Screw
89	9663	Spring, Shut-Off Lever
90	6966	Shut-Off Lever Assy.
91	19153	Retard Assy.
92	16817	Spring, Retard Arm
93	6713	Screw, Retard Assy. Mtg.
94	19873	Gear Assy.
95	1588	"C" Washer
96	19872	Spring
97	5339	Pawl Lever
98	5338	Spring, Pawl Lever
99	2569	Trip Lever Assembly
100	4656	Trip Link
101	1588	"C" Washer
102	7121	Slide Assy.
102A		Escape Lever
103	2246	Spring, Slide Bearing
104	2211	Slide Bearing
105	9849	Screw, Slide Bearing
106	6897	Record Support Shaft
107	18462	Record Support Guide Assy.
107A		Spring, Shift Lever Actuating
107B		Spring, Shut-Off Lever Actuating
108	4857	Screw, Record Support Guide Assy. Mtg.
109	2585	Spring, Escape Lever
110	7120	Detent Spring & Link Assy.
111	9849	Screw
112	14420	Ejector Bracket
113	9823	Screw, Ejector Bracket Mtg.
127	24865-A	Rubber Channel
128	20994	Felt Pad
129	1897	Lug

Ref. No.	Part No.		Description
	2-Pole Motor	4-Pole Motor	
	21566	21651	Motor Assy., Complete
114	18398	21594	Motor Basket Assy.
115	5022	5022	"C" Washer
116	7434	6948	Counter Balance Spring
117	9134-B	21789	Motor
118	1652	1652	"C" Washer
119	2583	2583	Fibre Washer
120	19388	20834	Idler Wheel
121	1652	1652	"C" Washer
122	7437	6901	Idler Link
123	7438	21476	Idler Arm Assy.
124	7439	6949	Idler Spring
125	6631	6631	Motor Mounting Grommet
126	6947	6947	Detent Spring

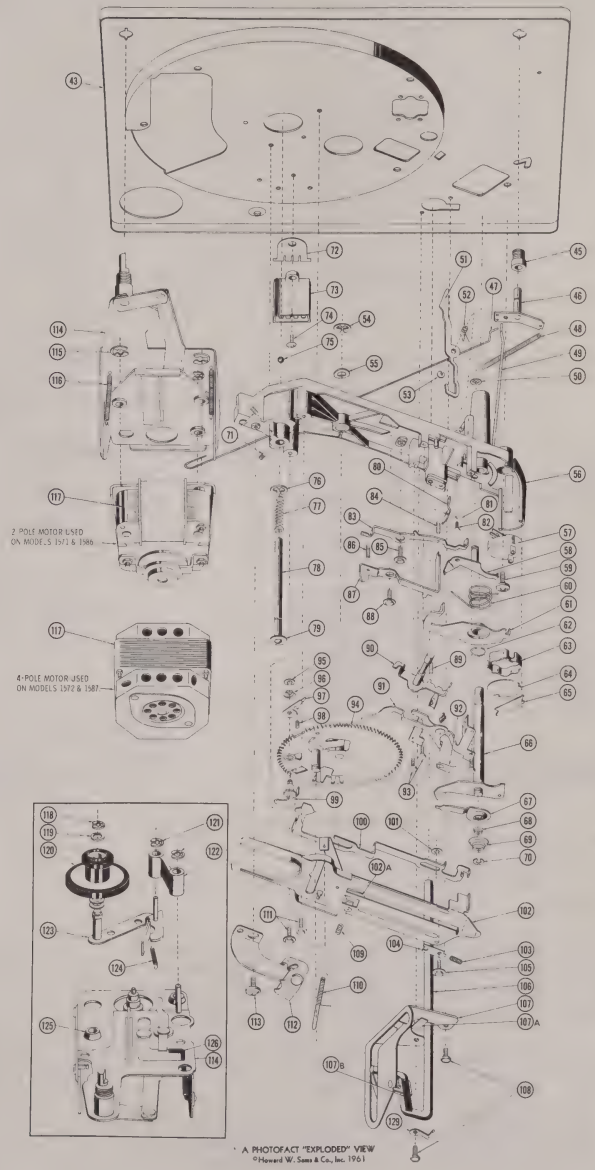
2-POLE MOTOR USED ON MODELS 1571 & 1586
4-POLE MOTOR USED ON MODELS 1572 & 1587
A PHOTOFACT "EXPLODED" VIEW
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Fig. 9. Exploded View of Parts Below Baseplate.

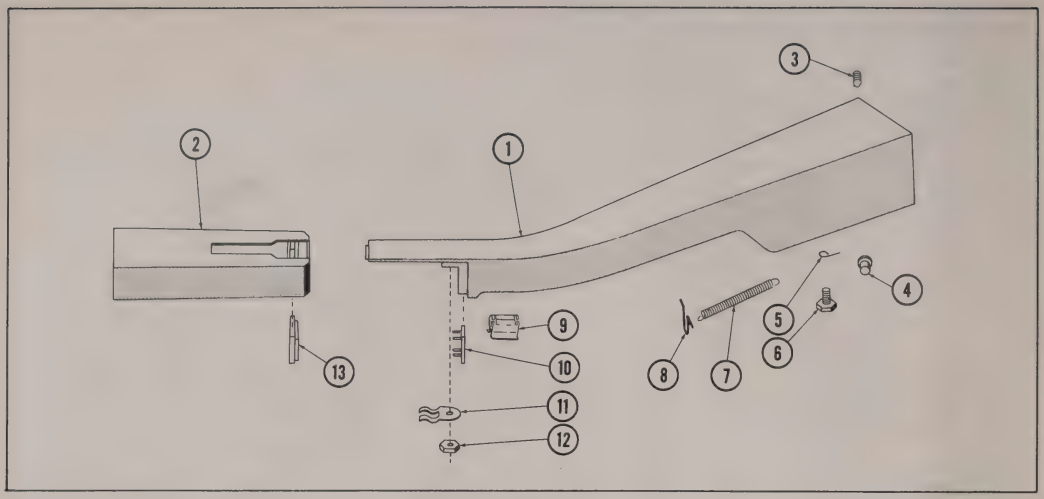


Fig. 10. Exploded View of Tone Arm Used in Models 1572 and 1587.

TONE ARM PARTS LIST (MODELS 1572 & 1587)

Ref. No.	Part No.	Description
1	21348-HJ	Tone Arm, Brown
2	15209-HJ	Head, Tone Arm
3	4923	Pivot Screw
4	4922	Pivot Button
5	7634	Lock Spring
6	7635	Lift Screw
7	6643	Hinge Spring

Ref. No.	Part No.	Description
8	6965	Weight Adjusting Spring
9	6963	Tone Arm Clip
10	21350	Plug, 4 Prong
11	21351	Retaining Spring
12	21473	Pal Nut
13	21349	Socket, 4 Prong

ADJUSTMENTS

Needle Setdown (Refer to Fig. 11)

1. Place either one 7-inch or one 10-inch record on the turntable.

2. Move the tone arm, by hand, to the center of the record.

3. Cycle the changer by rotating the turntable by hand, in a clockwise direction, until the tone arm has moved out over the rest post and returned to a position over the record and has begun to lower.

4. Stop rotating the turntable when the needle is about 1/2-inch above the record.

5. Raise the tone arm and turn eccentric setdown screw (26A) until the needle is positioned directly above the center of the lead-in grooves of the record.

6. Cycle changer automatically and check the needle landing point.

Tone Arm Height (Refer to Fig. 11)

The tone arm height is adjusted by means of height adjustment screw (16). To raise the tone arm height, turn this screw counterclockwise. To lower the tone arm, turn clockwise. Adjustment should be made to that the tone arm lifts 1/4-inch above a 1 1/8-inch stack of records.

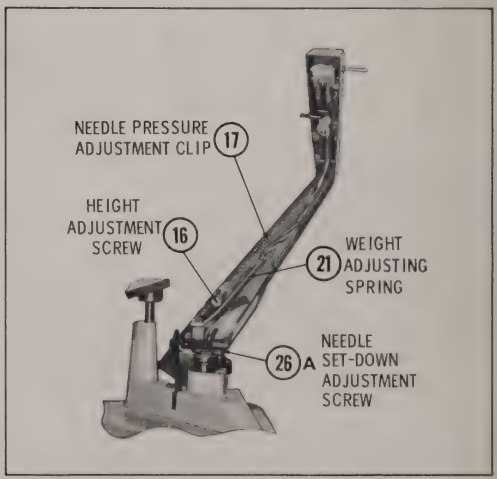

NEEDLE PRESSURE ADJUSTMENT CLIP 17
HEIGHT ADJUSTMENT SCREW 16
21 WEIGHT ADJUSTING SPRING
26A NEEDLE SET-DOWN ADJUSTMENT SCREW

Fig. 11. Tone Arm Adjustment Points.

Needle Pressure (Refer to Fig. 11)

Lift weight adjusting spring (17) from the calibrated position (grooves in tone arm) and move to a higher numbered position for less needle pressure or to a lower numbered position for more needle pressure. The needle pressure should be checked with a gram scale and set for 5 to 7 grams.

Motor Care

To correct uneven speed (wow), stalling or stoppage of the turntable, clean the drive surfaces marked "X" in Figure . To expose these drive surfaces, remove "O" ring (3) from the spindle and lift the turntable straight up and off the spindle. Use a small amount of carbon tetrachloride on a clean cloth and wipe all drive surfaces clean. Caution: Do not soak parts in carbon tetrachloride.

When replacing the turntable, lift the record guide (located inside the top end of the spindle) up to permit the turntable to pass over the spindle.

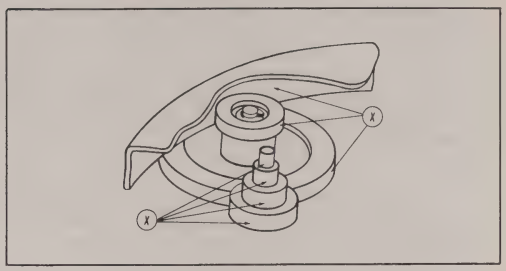


Fig. 12. Motor Drive Surfaces.

TROUBLE CHART

SYMPTOM	CAUSE	REMEDY
Turntable does not revolve when control is turned to "On" position.	1. No current at motor.	(a) Check that current is reaching AC leads of changer. (b) Check that switch is closing. (c) Check wiring and soldered terminals in the changer.
	2. Motor defective.	(a) Remove turntable to allow motor to operate without load. If current is reaching motor and drive spindle does not rotate, the motor is defective. Repair or replace.
	3. Motor idler wheel not engaging turntable rim.	If drive spindle is turning but turntable is not: (a) Check motor idler assembly to determine if it is free to contact the drive spindle and turntable rim. (b) Wipe off inside rim of turntable (4) to remove dust, or if oily, clean the turntable rim and rubber tire of the idler wheel with naptha or alcohol.
Changer does not cycle when the control knob is turned to the "Rej." position.	1. The manual reject not actuating the trip.	(a) Turn control knob (28) to the reject position; hold and see that control shaft assembly (58) has moved trip link (100) to the rear. This should actuate the trip pawl on main gear (94) which will bring the spur on the trip pawl in contact with the gear on the turntable hub. (b) Check for binding of pawl lever (97), trip lever assembly (99) and the trip pawl. If binding occurs, clean out all foreign matter and check for freedom.

TROUBLE CHART (Cont'd)

SYMPTOM	CAUSE	REMEDY
Control knob cannot be turned to "On" position.	1. Machine shut off during cycle.	Turn the turntable clockwise, by hand, until control knob (28) is free.
Tone arm strikes records on spindle when it raises, or tone arm rest when it moves out.	1. Tone arm height not adjusted properly.	(See instructions for adjusting tone arm height under "Adjustments".)
Turntable speed too slow (refer to exploded view).	1. Binding in turntable bearing.	Check the turntable bearing for freedom. Hold the motor idler wheel out of engagement with the turntable and spin the turntable, by hand, to see if it turns readily and coasts for a long time. If binding occurs, remove turntable, clean off foreign matter, and lubricate with light mineral oil.
	2. Line voltage too low.	The line voltage should not be less than 105 volts or the turntable may be too slow.
Turntable stalls or slows down during cycle; refer to exploded view.	1. Motor idler not engaging turntable.	(See "Turntable Does Not Revolve When Control Knob is Turned to "On Position").
	2. Binding in drive mechanism.	Hold idler away from turntable, or remove idler wheel. Cycle machine by turning turntable slowly by hand. The main gear should turn freely for the complete revolution without binding at any point. (a) If binding occurs, check for foreign matter in the gear teeth, a bent gear bearing, or bent spindle bushing. Straighten or replace. Clean and lubricate.
	3. Binding between pick-up arm lift pin (22) and lift pin cam surface on slide and cam assembly.	Lift pin should ride freely on cam surface without binding.
	4. Motor weak.	When everything checks all right, but the changer still stalls in cycle, the motor may be weak.
	5. Grease on idler wheel.	Wipe off idler wheel rubber tire, inner rim of turntable, and motor pulley, with naptha or alcohol.
	6. Idler wheel tension spring weak.	Replace spring.

TROUBLE CHART (Cont'd)

SYMPTOM	CAUSE	REMEDY
Changer continues to cycle.	Reject mechanism binding.	(a) Make certain trip link (100) is not frozen in the reject position. (b) Make certain changer control lever (58) is not binding and that it actuates trip link (100) when the changer control knob (28) is turned to reject. (c) Check for binding of trip pawl, trip lever (99) and pawl lever (97); these must be free to turn easily. (d) Check the changer control linkage, (49) and (58).
Noise during playing of record.	1. Motor rumble.	If a low-pitched rumbling sound comes from the loud speaker while a record is being played, check motor grommets to be sure the motor is freely suspended on them. The motor lead wires should have slack to allow the motor to float. Motor rumble may also come from an unbalanced motor rotor; in this case, replace the motor.
	2. Defective motor idler.	A rapid thumping sound while the motor is running may indicate a flat spot on the motor idler wheel. If this condition does not clear up after ten minutes of running time, remove the turntable and check the rubber tire on the idler. If the surface of the rubber tire is not smooth and even, replace the part. Should the bearing of the idler wheel show signs of excessive wear or be extremely wobbly, the idler wheel should be replaced.
	3. Turntable scrapes.	If a scraping sound occurs as the turntable revolves, check; (a) Turntable warped, causing outer rim to rise and fall. (b) Motor idler or mounting plate bent.
	4. Squeaks.	Squeaking sound as changer operates indicates lack of oil. Lubcate points indicated under "Lubcation".
Changer does not shut off after last record has been played.	1. Record support (1) binding.	The record support must drop below the off-set shoulder of the spindle or the changer will not shut off.
	2. Lever assembly (90) binding.	Clean out dirt and make sure lever operates smoothly.

TROUBLE CHART (Cont'd)

SYMPTOM	CAUSE	REMEDY
	3. Shut-off bracket binding.	Check bracket and if bent, straighten.
	4. Shut off lever not engaging locator.	Adjust tab on slide that rotates the locator and trip finger.
Rough tone arm motion.	1. Horizontal defects.	(a) Check tone arm return locator (61) for tightness.
		(b) Check that tone arm return spring (60) is not weak and is hooked up properly.
	2. Vertical defects.	(a) Lift pin (22) binding; clean out dirt and lubricate.
		(b) Slide and cam (102) binds; check bearing points - clean and lubricate.
		(c) Burrs in main slot in slide and cam (102) - remove with fine file.
		(d) Ejector lever on ejector bracket assembly (112) binding. Straighten, remove burrs, and lubricate.
		(e) Tone arm shaft and sleeve binding; clean and lubricate.
Noise during change cycle.	1. Tines on the forked end of the slide and cam assembly (102) bent.	Replace.
	2. Lack of lubrication. Grinding noise.	Lubricate ejector lever (112) where it contacts slower end of push rod (78).
Shuts of when last record drops.	1. Shut-off bracket (107) bent.	Straighten or replace.
	2. Record support bent.	Bend record support (1) until parallel with baseplate.
	3. Loose shut-off lever assembly (90).	Tighten.
	4. Escape lever spring (109) missing.	Replace.
Record does not drop when changer cycles.	1. Spindle push rod (78) broken, or bent.	Replace push rod (78).
	2. Record finger in spindle not moving far enough to eject a record.	The record finger should move forward until it has reached a point flush with, or a maximum of, .010 beyond the spindle body (9).

SYMPTOM	CAUSE	REMEDY
		To insure that the record finger is all the way forward, push rod (78) should be raised high enough by the ejector lever to slightly compress the pusher spring. (See "Turntable Stalls During Cycle".) If the spring is compressed and the record finger does not move far enough forward to eject a record, the spindle (9) should be replaced. If a record is not pushed completely off the ledge it may hang on the spindle momentarily, then drop on the tone arm when it moves in over the turntable.
	3. Check that ball bearing (75) is not missing.	Replace.
Two records drop at once.	1. Hole in record too large.	Check the diameter of the hole in the record. An oversize hole will cause two records to drop at once.
	2. Spindle guide not fully down.	If the spindle guide is not all the way down, more than one record may drop at a time. (a) Check the guide to be sure it is free and does not bind at any point. Clean out foreign matter or straighten if necessary. Do not oil. (b) When records are placed on the spindle, be sure the guide is all the way down. The guide will normally raise as a record is being dropped, but it should return to place immediately, by gravity.
	3. Slight play in spindle.	Tighten spindle set screw (71).
Needle does not set down on 12" record in proper position.	1. Diameter of 12" record undersize.	The set-down position of the needle for 12" records is determined by the edge of the record striking the 12" record selector (51). If a 12" record has a diameter of less than the standard size of 11-7/8" plus or minus 1/32", it may fail to depress the 12" record selector far enough.
	2. Enlarged center hole in record.	An enlarged center hold might fail to set the 12" record selector because it could produce the same effect as a small record.
	3. Tone arm not adjusted properly.	(See "Adjustments".)
	4. Binding of tone arm shaft and sleeve (66).	Clean and polish shaft (66) and lubricate with light oil.

TROUBLE CHART (Cont'd)

SYMPTOM	CAUSE	REMEDY
	5. Reset lever spring (84) broken.	Replace spring (84).
	6. 12" record selector spring (52) broken.	Replace spring (52).
	7. 12" record selector (51) binding.	The 12" record selector must be free to operate smoothly. Clean out dirt and straighten if bent, or replace.
	8. Bent tone arm return locator (61).	Straighten or replace.
	9. Bent trip finger cam (66).	Straighten or replace.
Needle does not set down on 7" record properly.	1. 7" set-down lever spring (86) broken or weak.	Replace.
	2. Tone arm not adjusted properly.	(See "Adjustments".)
	3. 7" set-down lever screw (88) loose.	Tighten.
	4. 7" set-down lever (87) hitting frame or base-plate where it goes through hole in frame.	Straighten or replace.
	5. Reset lever (83) bent.	Replace.
	6. 7" set-down lever (87) does not fall into opening in main gear.	
	7. Bent tone arm return locator (61).	Straighten or replace
	8. Bent trip finger cam (66).	Straighten or replace.
Changer does not cycle when record has been played.	1. No finishing trip groove on record.	Check record for eccentric trip groove in center of record. Some old records and home recordings do not have this eccentric trip groove.
	2. Needle jumps out of grooves in record.	(a) Check trip pressure; the lateral pressure should not exceed 3 grams, (if pressure is excessive, see "Changer Trips Before Needle Reaches End of Record").
		(b) The record may be defective; the finishing groove is often too shallow. Check with a record that is known to be good.

SYMPTOM	CAUSE	REMEDY
		(c) The needle point may be damaged or affected by an excessive accumulation of dust, lint, etc; check needle pressure as described under "Adjustments".
		(d) There may be binding in the tone arm shaft and sleeve assembly (66) or between the tone arm return locator (61) and the trip finger cam (66); (See "Needle Does Not Track Properly Across Record).
	3. Trip pawl binding on gear face.	The trip pawl must be free to move forward and engage the boss on the turntable hub when the trip lever releases it. Check for burrs or foreign matter lodged between the trip pawl and main gear (94). Do not oil as this might collect dirt and gum up the pawl.
	4. Trip finger cam (66) bent.	Straighten or replace.
	5. Trip link (100) bent.	Straighten or replace.
Changer trips before needle reaches end of record.	1. Hole in record too large.	If the hole in the record is too large, the groove may turn eccentric with the spindle and cause premature tripping.
	2. Binding of trip link (100).	With the trip link released, check the trip link for freedom of motion. It should be free to move without binding.
Record hits tone arm.	1. Record finger not moving far enough forward to eject record.	(See "Record Does Not Drop When Changer Cycles".)
	2. Record finger extending beyond outside diameter of spindle.	Cycle changer, by hand, until pusher shaft is at the top of its travel. Using new records as gauge, pass it over the spindle to see if it binds at any point. File off high points on record finger with a fine file, until record will pass freely over spindle.
	3. Tone arm not adjusted properly.	(See "Adjustments".)
Needle does not set down on 10" record in proper position.	1. Tone arm not adjusted properly.	(See "Adjustments".)
		(a) Loose nut (23) on pickup arm shaft and sleeve (66).
	2. Tone arm shaft and sleeve (66) binding.	File off burrs and rough surfaces. Polish and lubricate shaft.

TROUBLE CHART (Cont'd)

SYMPTOM	CAUSE	REMEDY
	3. 7" set-down lever (87) and 12" record selector (51) not operating properly.	Insure that proper operation and reset of 7" setdown lever (87) and 12" record selector (51) are not being interfered with.
	4. Needle bent.	Replace with new needle.
	5. Wire spring (52) broken.	12" record selector (51) does not cock; check for broken 12" record selector spring (52).
	6. Bent tone arm return locator (61).	Straighten or replace.
	7. Bent trip finger cam (66).	Straighten or replace.
Needle does not track across record properly.	1. Needle may be clogged by accumulation of lint, dirt, etc, or worn.	(a) Clean foreign material from around needle. (b) Check needle to see if the tip is bent or broken. Replace if necessary.
	2. Trip finger cam (66) does not disengage from the tone arm return locator (61) when cycle is completed.	There should be a 1/32" gap between the trip finger cam (66) and the tone arm return locator (61) when the machine is not in cycle.
	3. Check the bearing in the tone arm post for binding.	(a) Check tone arm return locator (61) and trip finger cam (66) for binding (See 2 above).
	4. Pickup leads too tight.	Give the pickup leads enough slack to allow the tone arm to move freely across a record.
Tone arm returns to rest post when not set for manual play.	1. Broken shift lever spring (107A).	1. Replace record support guide assembly (107).
Changer repeats record when set for manual play.	1. Broken or bent shift lever (80) or shift lever pin (81).	1. Inspect, replace parts if bent or broken.
	2. Loose retaining screw (82).	2. Tighten (be careful not to strip threds).

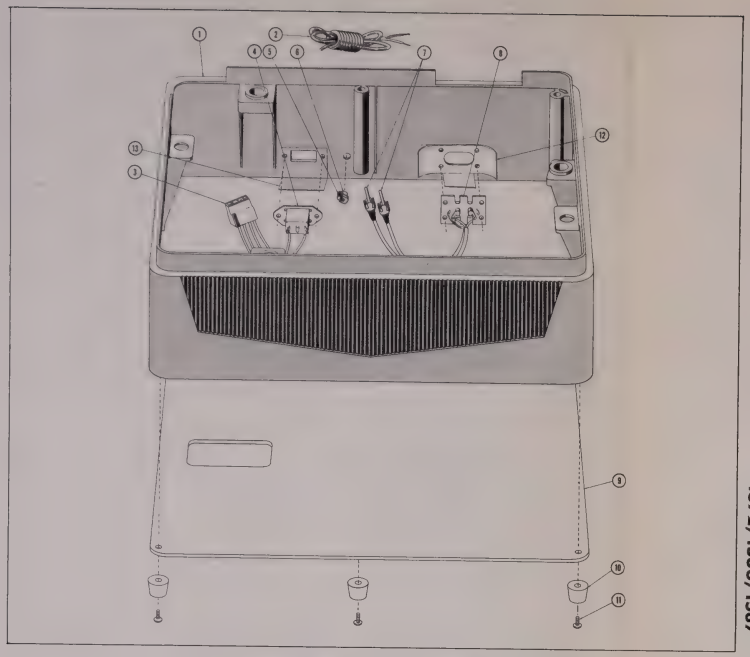


Fig. 13. Exploded View of Pan Used in Models 1586 and 1587.

PAN PARTS LIST (MODELS 1586 & 1587)

Ref. No.	Part No.	Description
1	16997-B31	Plastic Pan, Brown
2	14570	AC Cord
3	21942-8	Amplok Plug & Wire Ass'y.
4	4646	AC Outlet
5	19071	Heyco Bushing, Male
6	19072	Heyco Bushing, Female
7	644	Phono Plug
8	18339	Double Phono Socket
9	18353	Bottom Cover
10	19080-A	Bumper
11	19046	Screw, Bottom Cover
12	23981	Shield
13	19847	Insulator

PARTS NOT CALLED OUT

Part No.	Description
9920	Wire Nut
21901-24	Wire & Plug Assy. (Models 1571 & 1572)
7911	Washers (Models 1571-1572)
19145	Screw (Models 1571-1572)
24142-48	Cable & Plug Assy. (Models 1571-1572)
24143-48	Cable & Plug Assy. (Models 1571-1572)
18751-48	Cable & Plug Assy. (Models 1586-1587)
18752-48	Cable & Plug Assy. (Models 1586-1587)
14539	Wire Nut (Models 1586-1587)
18663-18	Cable & Clip Assy., Tone Arm (Models 1571-1586)
18664-18	Cable & Clip Assy., Tone Arm (Models 1571-1586)
18621-18	Cable & Clip Assy., Tone Arm (Models 1572-1587)
18622-18	Cable & Clip Assy., Tone Arm (Models 1572-1587)

FOLDER 14

PHOTOFACT® Folder

**WESTINGHOUSE CHASSIS
V-2512-1, V-2512-3**

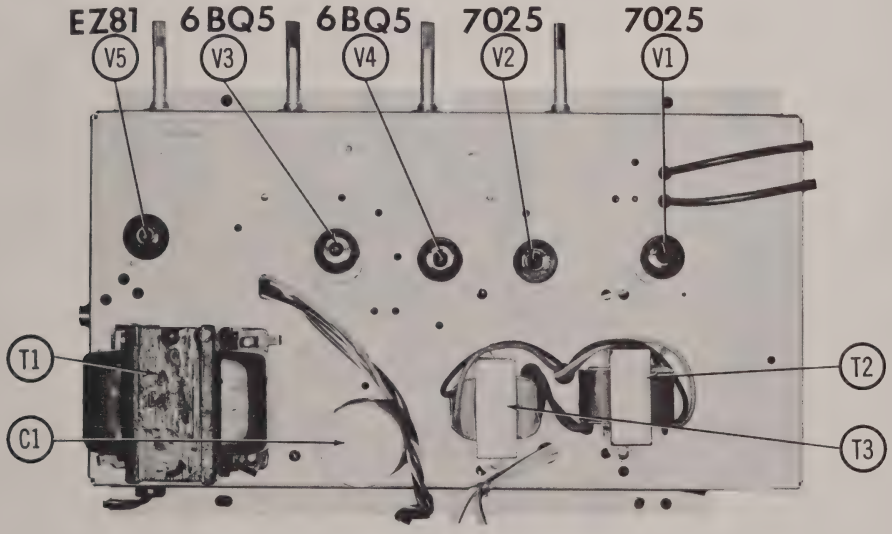
WESTINGHOUSE CHASSIS
V-2512-1, V-2512-3

MODEL H-F1052

TRADE NAME	Westinghouse H-F1010, H-F1011, H-F1012, H-F1013, H-F1050, H-F1050A, H-F1051, H-F1051A, H-F1052, H-F1052A, H-F1053, H-F1053A (Ch. V-2512-1) H-F1050B, H-F1051B, H-F1052B, H-F1053B (Ch. V-2512-3)
MANUFACTURER	Westinghouse Electric Corp., Radio-Television Div., Metuchen, N. J.
TYPE SET	AC Operated 5 Tube Stereo Phono Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	105 — 120 Volts AC, 60 Cycles RATING 61 Watts, .63 Amp. @117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER PART #670V009H01 OR 670V009H02 — SEE COLLARO CONQUEST REVISED — PHOTOFACT SET 408 FOLDER 6 OR RECORD CHANGER MANUAL RC-11

FOR SERVICE INFORMATION ON RECORD CHANGER PART #670V012H02 — SEE V-M 1200A — PHOTOFACT SET 353 FOLDER 16 OR RECORD CHANGER MANUAL RC-10



WESTINGHOUSE CHASSIS
V-2512-1, V-2512-3

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KT413

SET 527 FOLDER 15

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE
V1	Left Channel AF Amp. - Right Channel AF Amp.	7025 (12AX7) •
V2	Left Channel AF Amp. - Right Channel AF Amp.	7025 (12AX7) •
V3	Left Channel Output	6BQ5
V4	Right Channel Output	6BQ5
V5	Rectifier	EZ81/6CA4

• Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Westinghouse PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	350	218V037H06	AFH4-18-40	D0176	FP428.4	TMQ-4391	TVL-4774	
B	■40	350							
C	▲30	350							
D	30	350							
C2	10	25	218V025H33	PRS1250	BBR10-25	TC22	TD-10-25	TVA-1204	
C3	50	25	218V025H32	PRS1265	BBR50-25	TC29	TD-50-25	TVA-1206	
C4	4	50NP	218V025H19	PRS7405	BBR4-150	TCN504		TVANS-1302.5•	
C5	4	50NP	218V025H19	PRS7405	BBR4-150	TCN504		TVANS-1302.5•	

• Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	.022 600V		P688N-022	DD-203	CUB6S22	6DP-2-223	GEM-6122	6TM-S22
C7	100	Note 1	DI-100	DD-101	Li0T1	CCD-101	GP310	10TS-T10
C8	2200	Note 1	DI-2200	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C9	20000	Note 1	BPD-02	DD-203	BYA6S2	CCD-203	GP120	5HK-S20
C10	2200	Note 1	DI-2200	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C11	.01 600V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C12	.022 600V		P688N-022	DD-203	CUB6S22	6DP-2-223	GEM-6122	6TM-S22
C13	100	Note 1	DI-100	DD-101	Li0T1	CCD-101	GP310	10TS-T10
C14	2200	Note 1	DI-2200	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C15	20000	Note 1	BPD-02	DD-203	BYA6S2	CCD-203	GP120	5HK-S20
C16	2200	Note 1	DI-2200	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C17	.01 600V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10

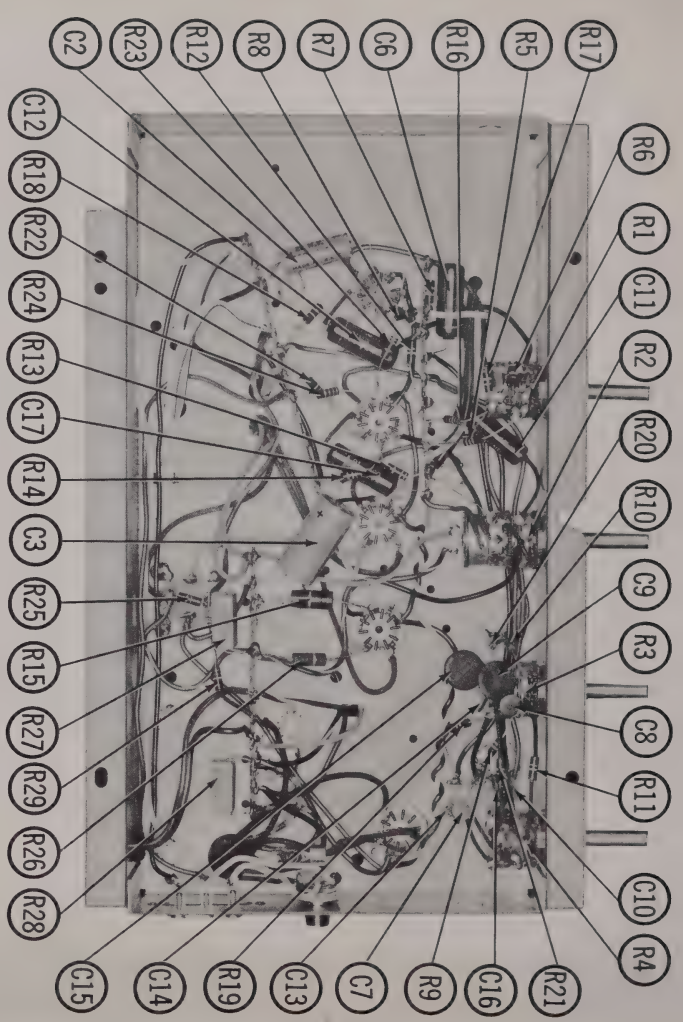
Note 1. Part of a capacitor-resistor unit in late production versions (Part #219V021H01).

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Westinghouse PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	2meg		270V093H01	B-76	AD47-2meg-A		FB26A	Loudness, Left Channel
B	2meg			SR-76	Not Req.		RU26A	Loudness, Right Channel
C	Shaft			Not Req.	FS-3		CS3500	
R2A	500K		270V093H03 ①	TPL-107				Balance, Left Channel
B	500K			Not Req.				Balance, Right Channel
C	Switch			Not Req.				Push-Pull Monaural-Stereo
R3A	1meg		270V093H02	B-69	AD47-1meg-S		FB16L	Bass, Left Channel
B	1meg			SR-69	Not Req.		RU16L	Bass, Right Channel
C	Shaft			Not Req.	FS-3		CS3500	
R4A	1meg		270V093H02	B-69	AD47-1meg-S		FB16L	Treble, Left Channel
B	1meg			SR-69	Not Req.		RU16L	Treble, Right Channel
C	Shaft			Not Req.	FS-3		CS3500	

① Chassis V-2512-3 use Part #270V093H04(without switch) in this application.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R5	680K				R18	220K			
R6	820K				R19	150K			Note 1
R7	220K				R20	10K			Note 1
R8	1000Ω				R21	100K			
R9	150K			Note 1	R22	150K			
R10	10K			Note 1	R23	6800Ω			
R11	100K				R24	33K			
R12	150K				R25	12K			
R13	6800Ω				R26	2200Ω 1W			
R14	33K				R27	230Ω 4W	PW5-230	5W-SQ-230	
R15	100Ω 2W				R28	47Ω 4W	PW5-47	5W-SQ-47	Note 2
R16	680K				R29	330K			
R17	820K								

Note 1. Part of a capacitor-resistor unit in late production versions (Part #219V021H01).
Note 2. Not used in Chassis V-2512-3.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	Westinghouse PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V Ⓐ .63A	500VCT Ⓐ .090A DC	6.3V Ⓐ 3A	410V021H01 ①		PM-8420			① Part #410V025H01 used in Chassis V-2512-3

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Westinghouse PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	6700Ω CT	6-8Ω CT	430V041H03					
T3	3400Ω	3-4Ω	430V041H04					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Westinghouse PART No.	QUAM PART No.	
SP1	8"	PM	6-8Ω	570V076H01*‡	8A21Z6.4	* Models H-F1050, B, H-F1051, B, H-F1052, B, H-F1053, B
SP2	4"	PM	6-8Ω	570V071H01*♦	4A1Z6.4	‡ Models H-F1050A, B, H-F1051A, B, H-F1052A, B, H-F1053A, B
SP3	8"	PM	6-8Ω	570V076H01*‡	8A21Z6.4	♦ Models H-F1010, H-F1011, H-F1012, H-F1013
SP4	4"	PM	6-8Ω	570V071H01*♦	4A1Z6.4	
	5"	PM	10-12Ω	570V047H02 ‡	5A07Z13.5	
	6"	PM	6-8Ω	570V068H02 ♦	6A1Z4.8	

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA								NOTES
	Westinghouse PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		SONOTONE PART No.		
	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	
M1	671V001H02	Not Req.	13T	Not Req.	13	Not Req.	10T2-S	Not Req.	

MISCELLANEOUS

ITEM No.	PART NAME	Westinghouse PART No.	NOTES
M2	Switch		Off-On (Part of Changer)
M3	Motor		Phono-Drive (Part of Changer)

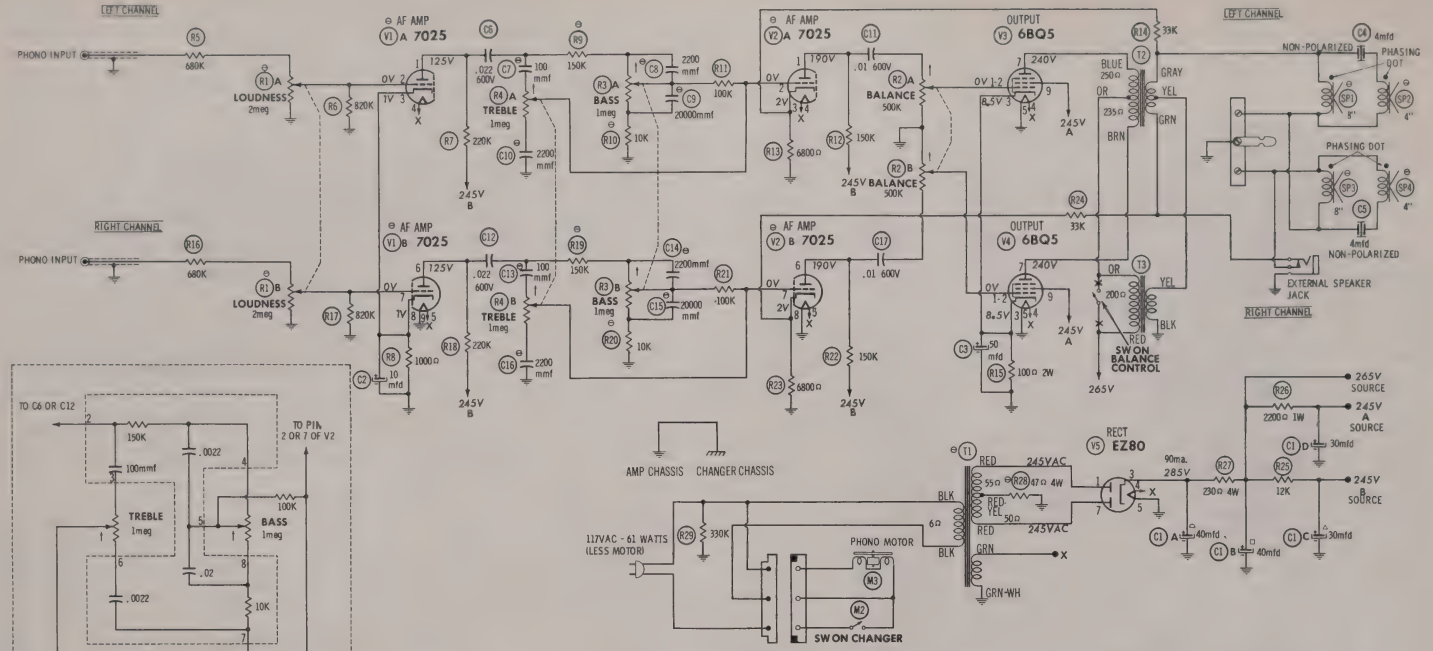
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	550V118H01	Models H-F1050 Series
Knob	550V118H04	Models H-F1010, H-F1011, H-F1012, H-F1013
Cabinet	516V227H01	Walnut, Model H-F1050A
Cabinet	516V172H01	Walnut, Model H-F1050
Cabinet	516V227H03	Walnut, Model H-F1050B
Cabinet	516V173H01	Mahogany, Model H-F1051
Cabinet	516V228H01	Mahogany, Model H-F1051A
Cabinet	516V228H02	Mahogany, Model H-F1051B
Cabinet	516V227H02	Limed Oak, Model H-F1052A
Cabinet	516V172H02	Limed Oak, Model H-F1052
Cabinet	516V227H04	Limed Oak, Model H-F1052B
Cabinet	516V174H01	Maple, Model H-F1053
Cabinet	516V229H01	Maple, Model H-F1053A
Cabinet	516V229H02	Maple, Model H-F1053B
Cabinet	516V230H01	Walnut, Model H-F1010
Cabinet	516V230H02	Mahogany, Model H-F1011
Cabinet	516V230H03	Limed Oak, Model H-F1012
Cabinet	516V230H04	Maple, Model H-F1013
Lid	690V024H61	Cabinet, Walnut, Model H-F1050A, H-F1050B
Lid	690V024H13	Cabinet, Walnut, Model H-F1050
Lid	690V024H12	Cabinet, Mahogany, Model H-F1051
Lid	690V024H62	Cabinet, Mahogany, Models H-F1051A, H-F1051B
Lid	690V024H63	Cabinet, Limed Oak, Models H-F1052A, H-F1052B
Lid	690V024H14	Cabinet, Limed Oak Model H-F1052
Lid	690V024H64	Cabinet, Maple, Model H-F1053B
Lid	690V024H18	Cabinet, Maple, Model H-F1053
Lid	690V024H75	Cabinet, Walnut, Model H-F1010
Lid	690V024H76	Cabinet, Mahogany, Model H-F1011
Lid	690V024H77	Cabinet, Limed Oak, Model H-F1012
Lid	690V024H78	Cabinet, Maple, Model H-F1013

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting) .....Use BELDEN No. 8401
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	7025	†230K	0Ω	1000Ω	.1Ω	.1Ω	†230K	0Ω	1000Ω	0Ω
V2	7025	†160K	110K	6800Ω	.1Ω	.1Ω	†160K	110K	6800Ω	0Ω
V3	6BQ5	NC	400K	100Ω	.1Ω	0Ω	NC	†680Ω	NC	†2500Ω
V4	6BQ5	NC	400K	100Ω	.1Ω	0Ω	NC	†665Ω	NC	†2500Ω
V5	EZ81 6CA4	102Ω	NC	¶	0Ω	.1Ω	NC	97Ω	NC	NC

ALL MEASUREMENTS MADE IN "STEREO" POSITION.
† MEASURED FROM PIN 3 OF V5.
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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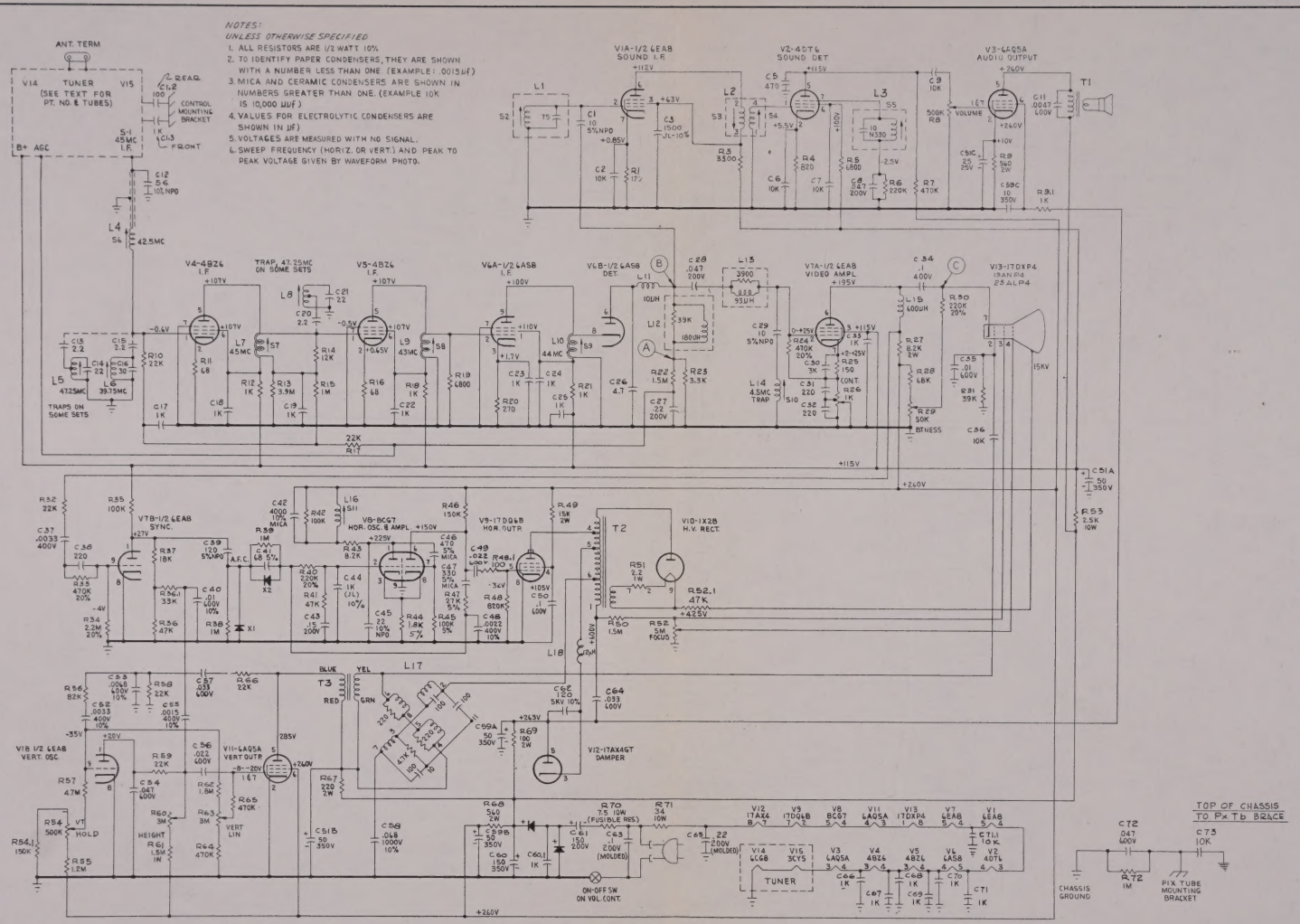
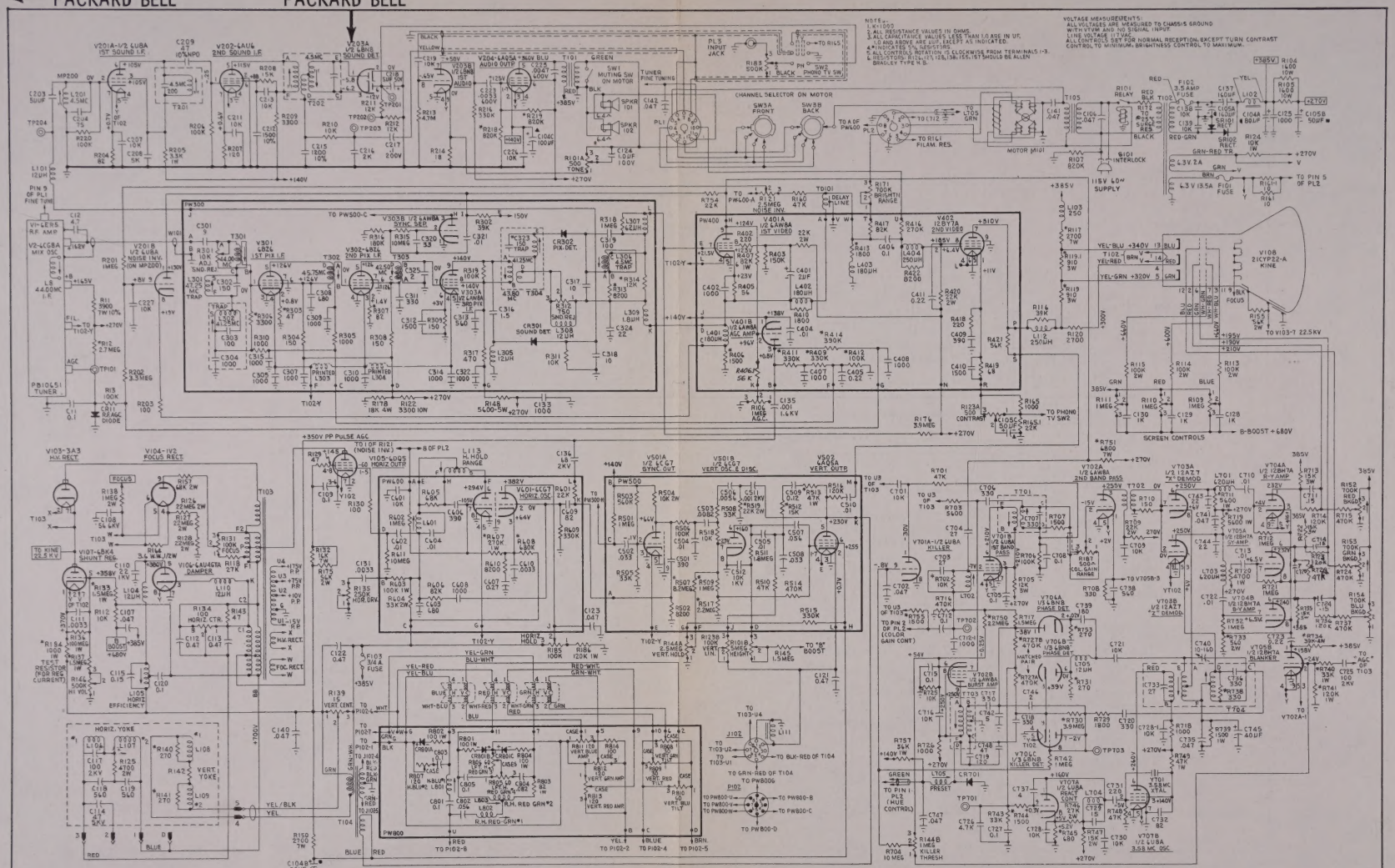
WESTINGHOUSE CHASSIS V-2512-1, V-2512-3


NOTES:
UNLESS OTHERWISE SPECIFIED
1. ALL RESISTORS ARE 1/2 WATT 10%
2. TO IDENTIFY PAPER CONDENSERS, THEY ARE SHOWN WITH A NUMBER LESS THAN ONE. (EXAMPLE: .0015 µf)
3. MICA AND CERAMIC CONDENSERS ARE SHOWN IN NUMBERS GREATER THAN ONE. (EXAMPLE 10K IS 10,000 µµf)
4. VALUES FOR ELECTROLYTIC CONDENSERS ARE SHOWN IN µf)
5. VOLTAGES ARE MEASURED WITH NO SIGNAL.
6. SWEEP FREQUENCY (HORIZ. OR VERT.) AND PEAK TO PEAK VOLTAGE GIVEN BY WAVEFORM PHOTO.
ANT. TERM
V14 TUNER (SEE TEXT FOR PT. NO. & TUBES)
V15
2 EEAQ
CONTROL MOUNTING BRACKET
FRONT
B+ AGC
V1A-1/2 6EA8 SOUND I.F.
V2-6DT6 SOUND DET
V3-6AQ5A AUDIO OUTPUT
VOLUME
V4-6BZ6 I.F.
TRAP, 47.25MC ON SOME SETS
V5-6BZ6 I.F.
V6A-1/2 6AS8 I.F.
V6B-1/2 6AS8 DET.
V7A-1/2 6EA8 VIDEO AMPL.
V7B-1/2 6EA8 SYNC.
V8-6CG7 HOR. OSC. & AMPL.
V9-17DQ6B HOR. OUTP.
V10-1X2B H.V. RECT.
V11-6AQ5A VERT OUTP.
V12-17AX4GT DAMPER
V13-17DXP4 (BANP4 25 ALP4)
V18 1/2 6EA8 VERT. OSC.
TRAPS ON SOME SETS
HOLD
HEIGHT
VERT LIN
BLUE
YEL
GRN
RED
ON-OFF SW ON VOL. CONT.
TUNER
CHASSIS GROUND
PIX TUBE MOUNTING BRACKET
TOP OF CHASSIS TO PIX TUBE BRACE

PACKARD BELL MODELS 17VT11, 19VT1, 23VT1 (CH. V8-7, V8-9)

Schematic Diagram Courtesy of Packard Bell Electronics Corp.



PACKARD BELL MODELS 21CC3, 21CK1 (CH. 98C3, 98C4)

Schematic Diagram Courtesy of Packard Bell Electronics Corp.

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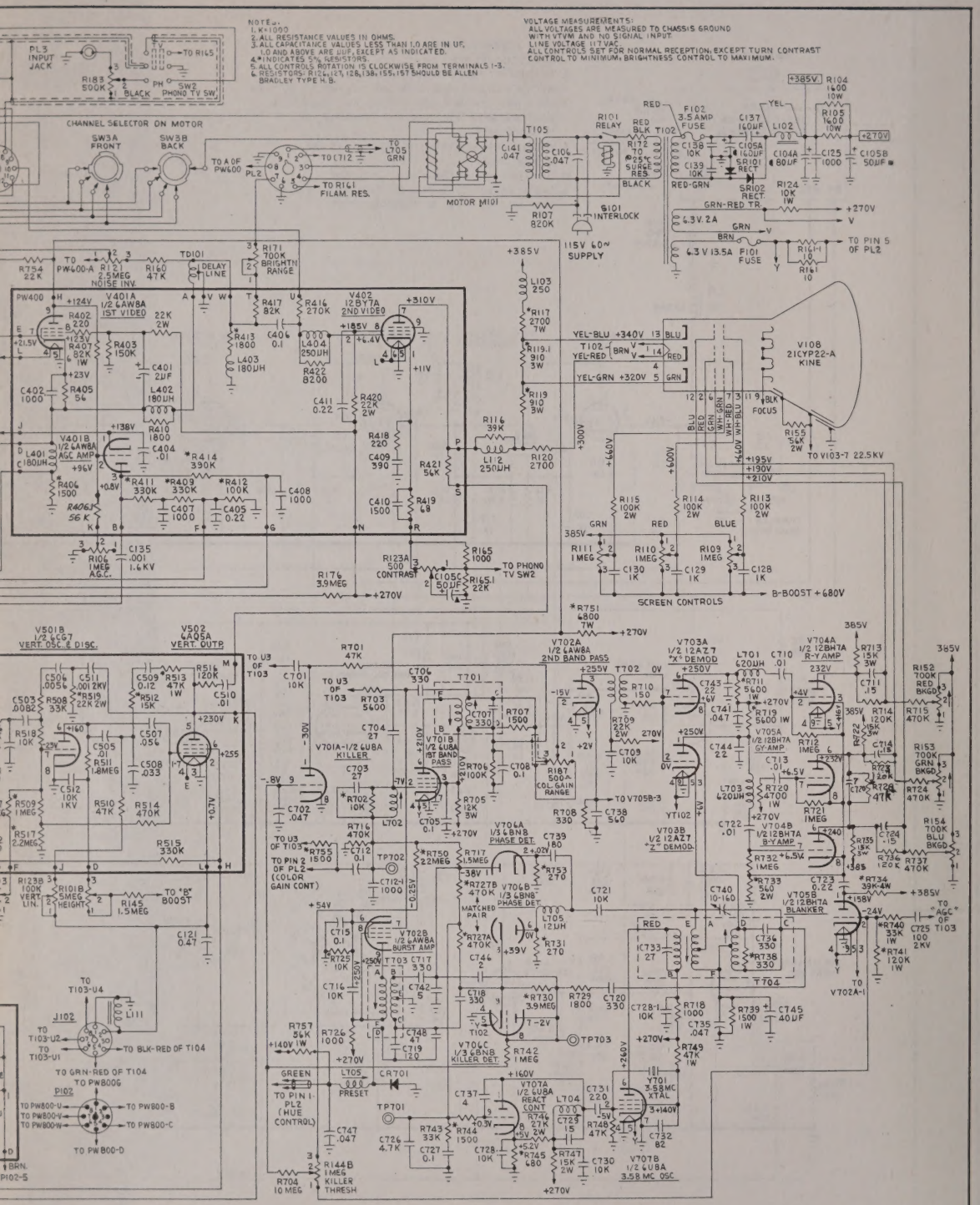

Schematic Diagram Courtesy of Packard Bell Electronics Corp.